Application

for a

Certificate of Environmental Compatibility

L-00000D-09-0280-00146

APS Q43 500kV TRANSMISSION LINE AND SWITCHYARD INTERCONNECTION PROJECT

Prepared for:
Arizona Corporation Commission
Arizona Power Plant and Transmission Line Siting Committee

Submitted by:
Arizona Public Service Company on behalf of
Arizona Public Service Company and San Diego Gas & Electric Company

Date: _____
Case No. _____

BEFORE THE
ARIZONA POWER PLANT AND TRANSMISSION LINE SITING COMMITTEE

In the matter of the Application of Arizona Public Service Company, in conformance with the requirements of Arizona Revised Statutes 40-360.03 and 40-360.06, for a Certificate of Environmental Compatibility authorizing construction of the APS Q43 500kV Transmission Line and Switchyard Interconnection Project and associated facilities interconnecting to the existing Palo Verde - North Gila #1 and future Palo Verde - North Gila #2 500kV transmission lines approximately 10 miles north of Dateland, Arizona (Section 34, T5S, R12W, G&SRBM, Yuma County, Arizona)	)))))))))	Case No. _____

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APPLICATION FOR
CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY

EXECUTIVE SUMMARY

Arizona Public Service (APS), on behalf of itself and San Diego Gas & Electric Company (SDG&E) as co-Applicant, is submitting this Application for a Certificate of Environmental Compatibility (CEC) for a series of proposed 500 kV transmission lines and a new regional switchyard that will initially connect the solar project proposed by Agua Caliente Solar LLC, to the existing Palo Verde - North Gila #1 500kV transmission line (Arizona Corporation Commission Decision # 52428). A CEC Application for the solar project was recently filed by Agua Caliente Solar, LLC with the Arizona Corporation Commission (ACC).

The Project will be designed to accommodate the future interconnection of the planned Palo Verde - North Gila #2 500kV transmission line (ACC Decision #70127), a future 500kV/69kV substation, and other related transmission facilities. The switchyard will be constructed initially as a three breaker 500kV ring bus switching station but will be designed for a breaker-and-a-half configuration substation at full build-out.

The Project is located in Yuma County approximately 10 miles north of Dateland, Arizona, 45 miles west of Gila Bend, Arizona and 65 miles east of Yuma, Arizona. **Figure ES-1, Project Location Map** shows the general location of the Project. The Project will be located on a portion of a 3,800 acre private agricultural property referred to as the "Whitewing Ranch" (Property) located along Palomas Road (also referred to as Palomas/Hyder Road). The Project Site will occupy approximately 30 acres of the Property.

The Project Site was selected for the following reasons:

- The proposed Project Site is located immediately adjacent to the proposed Agua Caliente Solar, LLC solar project, the existing Palo Verde - North Gila #1, and future Palo Verde - North Gila #2 500kV transmission lines, which would allow for the interconnection of the proposed solar plant and other future infrastructure to the electrical grid.

- The Project is located on private land previously used for irrigated agriculture and will not introduce substantial impacts to existing or future land use.

- The nearest existing residences are located approximately 1.5 miles from the Project. There is no active residential development and no new planned subdivisions near the Project Site.

- No critical habitat will be affected by the Project because all construction will occur on lands that are all currently and historically cultivated agricultural land that contains no native habitats. Likewise, there will be no significant impacts to any threatened or endangered plant or animal species.

The analyses for this Application also show that several critical elements of concern are not present or will not be affected by the siting, construction or operation of the Project, including Wild and Scenic Rivers, Areas of Critical Environmental Concern (ACEC), wetlands or riparian areas, or solid and hazardous waste areas.

The analyses also show there will be no significant direct, indirect or cumulative adverse effects on land use, cultural resources, wilderness areas, biological resources, special interest wildlife and plant species, ground or surface water quality, earth and soil resources, air quality or noise. No significant impacts to minority or low income populations are expected to occur.

There will be socioeconomic benefits derived from the Project. In the short-term, the construction work force will increase revenues in the retail and service sectors of the local and state economy. In the long-term, the interconnection of available power through the Substation to the electric transmission system will provide access to renewable resources and a more robust and reliable electric service system.

The Applicant therefore requests approval of this Application and submits that the Project and its location are environmentally compatible.

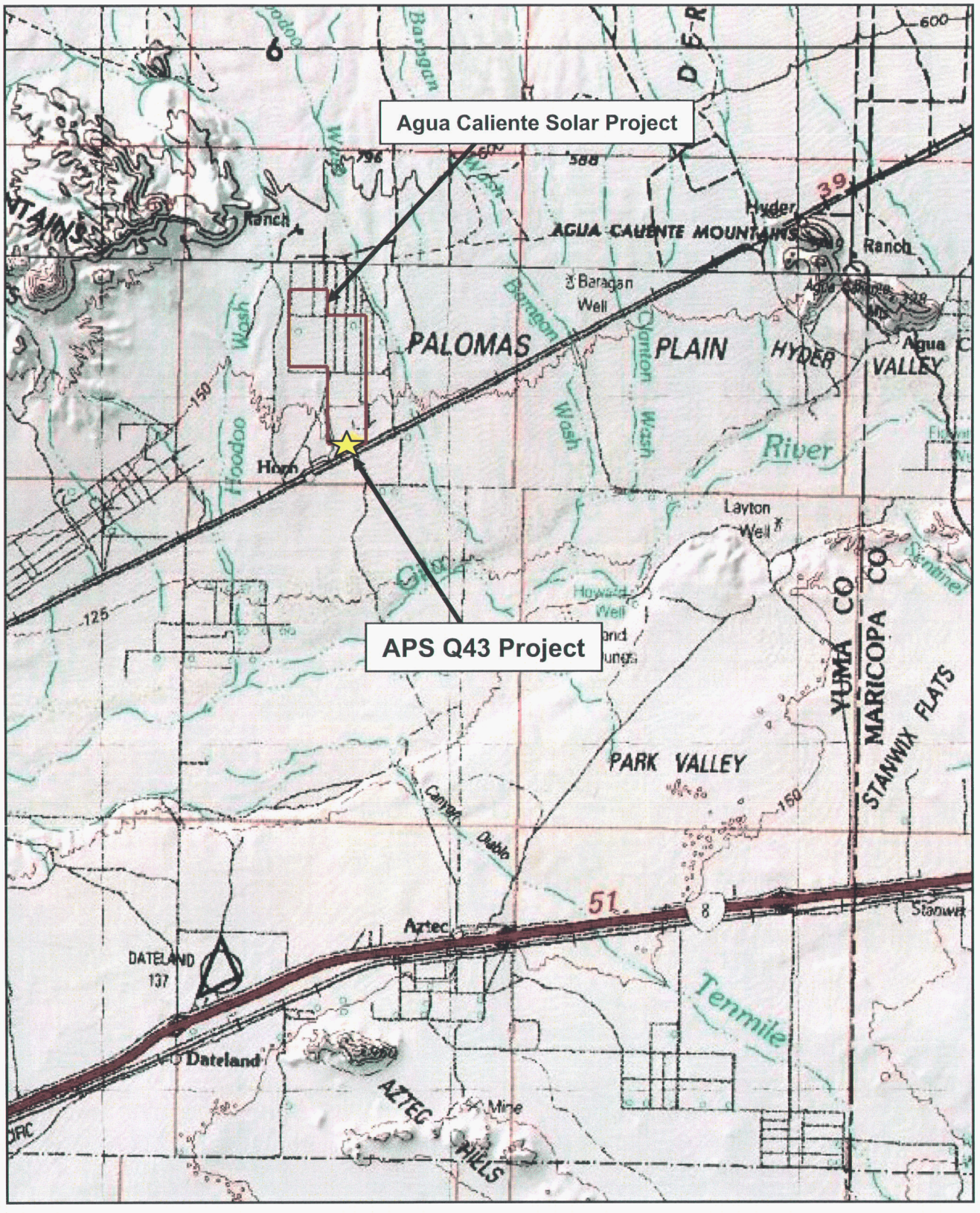

Figure ES-1
APS Q43 500kV TRANSMISSION LINE
AND SWITCHYARD INTERCONNECTION PROJECT
Project Location

Application

APPLICATION

1. NAME AND ADDRESS OF THE APPLICANT, OR IN THE CASE OF A JOINT PROJECT, THE APPLICANTS:

Arizona Public Service Company (APS)
P.O. Box 53933
Phoenix, AZ 85072-3933

San Diego Gas & Electric Company (SDG&E)
8330 Century Park Court, CP52A
San Diego, California 92123

APS is submitting this Application on behalf of itself and San Diego Gas & Electric Company (SDG&E) as co-Applicant. These two companies, along with the Imperial Irrigation District (IID), are the owners of the Palo Verde - North Gila #1 500kV transmission line and are collectively referred to herein as the Transmission Owners.

2. NAME, ADDRESS, AND TELEPHONE NUMBER OF A REPRESENTATIVE OF THE APPLICANT WHO HAS ACCESS TO TECHNICAL KNOWLEDGE AND BACKGROUND INFORMATION CONCERNING THIS APPLICATION, AND WHO WILL BE AVAILABLE TO ANSWER QUESTIONS OR FURNISH ADDITIONAL INFORMATION:

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mmirzadeh@semprautilities.com

3. DATE ON WHICH THE APPLICANT FILED A PLAN IN COMPLIANCE WITH ARS §40-360.02, IN WHICH THE FACILITIES FOR WHICH THIS APPLICATION IS MADE WERE DESCRIBED:

Agua Caliente Solar, LLC filed information about this 500kV interconnection as part of its Ten Year Plan in compliance with ARS 40-360.02 on January 30, 2009.

4. DESCRIPTION OF PROPOSED FACILITY

4.b) Electrical Interconnection

The Project[1] will consist of a series of proposed 500 kV transmission lines and a new regional switchyard that will initially connect the solar project proposed by Agua Caliente Solar LLC, to the existing Palo Verde - North Gila #1 500kV transmission line (ACC Decision # 52428). The Project will be designed to accommodate the future interconnection of the planned Palo Verde - North Gila #2 500kV transmission line (ACC Decision #70127), a future 500kV/69kV substation, and other related transmission facilities. A CEC Application for the solar project was recently filed by Agua Caliente Solar, LLC.

The Project will be located on a portion of a 3,800-acre private agricultural property referred to as the "Whitewing Ranch" (Property) in the northwest corner of Section 34, T5S, R12W, G&SRBM, Yuma County, Arizona (see **Figure ES-1, Project Location Map**). The Project Site is located just north of Palomas Road (also referred to as Palomas/Hyder Road) and will occupy approximately 30 acres of the Property.

The proposed layout of the Project is shown on **Figure 4-1, Project Layout.** The Project will loop in the existing Palo Verde – North Gila #1 500kV transmission line to the switchyard as part of the initial development. To facilitate this loop in and the future loop in of the Palo Verde – North Gila #2 tie to the switchyard, each line termination will have a new turning structure located within the existing transmission line right-of-way. From each of the turning structures there will be a single 500kV span into a dead-end structure located within the switchyard. The turning structures will be constructed on either single-circuit, three-phase tubular steel poles or steel lattice structures approximately 110 feet tall as shown in **Exhibit G-2**. The 500kV spans will be designed to maintain phase-phase, phase-ground clearances per all applicable codes and standards.

The Project will be designed as a breaker-and-a-half configuration to accommodate future plans of the Transmission Owners and potential future third-party developers.

[1] The Transmission Owners will officially name the facility at the time of property title transfer

Initially, three 500kV breakers and supporting bus work and structures will be built to accommodate the line terminations from (i) Palo Verde, (ii) North Gila and (iii) the Agua Caliente Solar LLC, solar project. This initial phase will include 500kV bus work and disconnect switches to limit outages for future installations. The Project will ultimately be able to accommodate up to seven 500kV line positions, a 500kV/69kV transformer bank, and a six-breaker 69kV ring bus. The size of the transformer bank and the timeframe for its installation have not currently been identified; however, it will be designed and built to APS' specifications and standards, as APS will manage the detail design, procurement and construction of the Project. APS will also operate and maintain the future substation.

The Project features will also include a control enclosure for the housing of the critical protective relaying, the Supervisory Control and Data Acquisition (SCADA) system and communication systems. The control room building will include sufficient battery capacity (minimum required is 8 hours of battery capacity) to reliably operate the Project as part of the interconnected EHV system. A new 100-foot microwave tower will be constructed to support sufficient dishes and antenna to provide reliable integration of the Project into the APS communications network.

Station service power will be provided from an APS distribution feed located on Project Site and a backup power source from an on-site 355kW diesel generator fueled by a 400 gallon "base" tank located as part of the base of the generator with the ability to operate the generator for 12 hours at full load.

The line segment of the Palo Verde – North Gila #1 500kV line between the Project and the Palo Verde Hub may also require series capacitors to be placed within a designated portion of the Project Site. The series capacitors are utilized to reduce the transmission line impedance and maintain flow requirements for the original rating of the existing Palo Verde – North Gila #1 500kV transmission line.

The Project Site will be graded with fencing encompassing the full 30 acres of the final Project configuration. The Project Site perimeter will be secured with a minimum 7-foot tall, chain link metal-fabric security fence with 1-foot barbed wire or razor wire on top.

Access to the Project will be via the Dateland interchange on Interstate-8 at Dateland, Arizona, then nine (9) miles north on 64E Avenue, then approximately four (4) miles east on Palomas Road to the Project Site entrance. Access to the switchyard will be controlled through a secured gate at the switchyard entrance.

4.b.i) Nominal Voltage

The Project will initially include a series of 500kV interconnection transmission lines between the Switchyard and the existing Palo Verde – North Gila #1 500kV line. The switchyard will have an interconnection voltage of 500kV. The electrical one-line

diagram of the initial phase of the Project is shown on **Figure 4-2, Electrical One Line Diagram**.

4.b.ii) Description of Endpoints

The transmission interconnection will be a loop-in of the proposed switchyard to the existing Palo Verde – North Gila #1 500 kV line and the future Palo Verde – North Gila #2 500kV line, with the end points being new turning structures located within the existing 500kV line rights-of-way and the dead-end structures located within the switchyard. The tie lines, turning structures and the dead end structure can be viewed in **Figure G-1, Visual Rendering**.

4.b.iii) Right-of-Way Width

Applicant will seek a right-of-way of up to 200 feet for each of the lines that tie into the existing Palo Verde – North Gila #1 500kV and future Palo Verde – North Gila #2 500kV transmission lines to the dead end structures in the switchyard. The final design of the Project will determine the specific location of the right-of-way for these lines but they would be located within the corridor approved for the Palo Verde to North Gila #2 500kV transmission line (ACC Decision # 70127) plus 200 feet south of the centerline of the existing Palo Verde to North Gila #1 500kV transmission line that extends along the southern boundary of the Property (Corridor). See **Figure 4-3, Interconnection Right of Way Corridor**

4.b.iv) Estimated Costs

The project costs for the initial interconnection facility development to accommodate the Agua Caliente solar project are estimated to be $34 million. The full build-out of the facility, including the transformers and other substation equipment, are not included in this initial estimate and will be based on the final configuration and composition of the facility.

4.b.v) Description of Proposed Route and Substation Locations

The proposed Project location will primarily be the Whitewing Ranch, as shown on **Figure ES-1, Project Location Map**. The turning towers will be located within the corridor identified in Figure 4-3, Interconnection Right of Way Corridor. The 500kV lines will traverse Palomas Road and the UPPR rail line and connect the turning towers to the switchyard.

4.b.vi) Ownership Percentages of Land Traversed by the Route

The Project will be located wholly on private lands. The switchyard will be located on the Property and the tie lines to the Palo Verde – North Gila #1 500kV transmission line

will cross the UPPR rail, the Palomas Road and approximately 100 feet of private land south of the road that is not contained within the existing 500kV transmission line right of way. The specific location of the tie-lines connecting to the future Palo Verde – North Gila #2 transmission line will be identified at such time that final engineering and design of that project is complete.

Agua Caliente Solar, LLC has obtained site control of the Property.

Gregory Bernosky
APS Project Director, on behalf of APS

FOR
Linda P. Brown
SDG&E Director of Transmission Planning

ORIGINAL and 25 copies of the foregoing hand delivered and filed with the Director of Utilities, Arizona Corporation Commission, this 1st day of June, 2009.

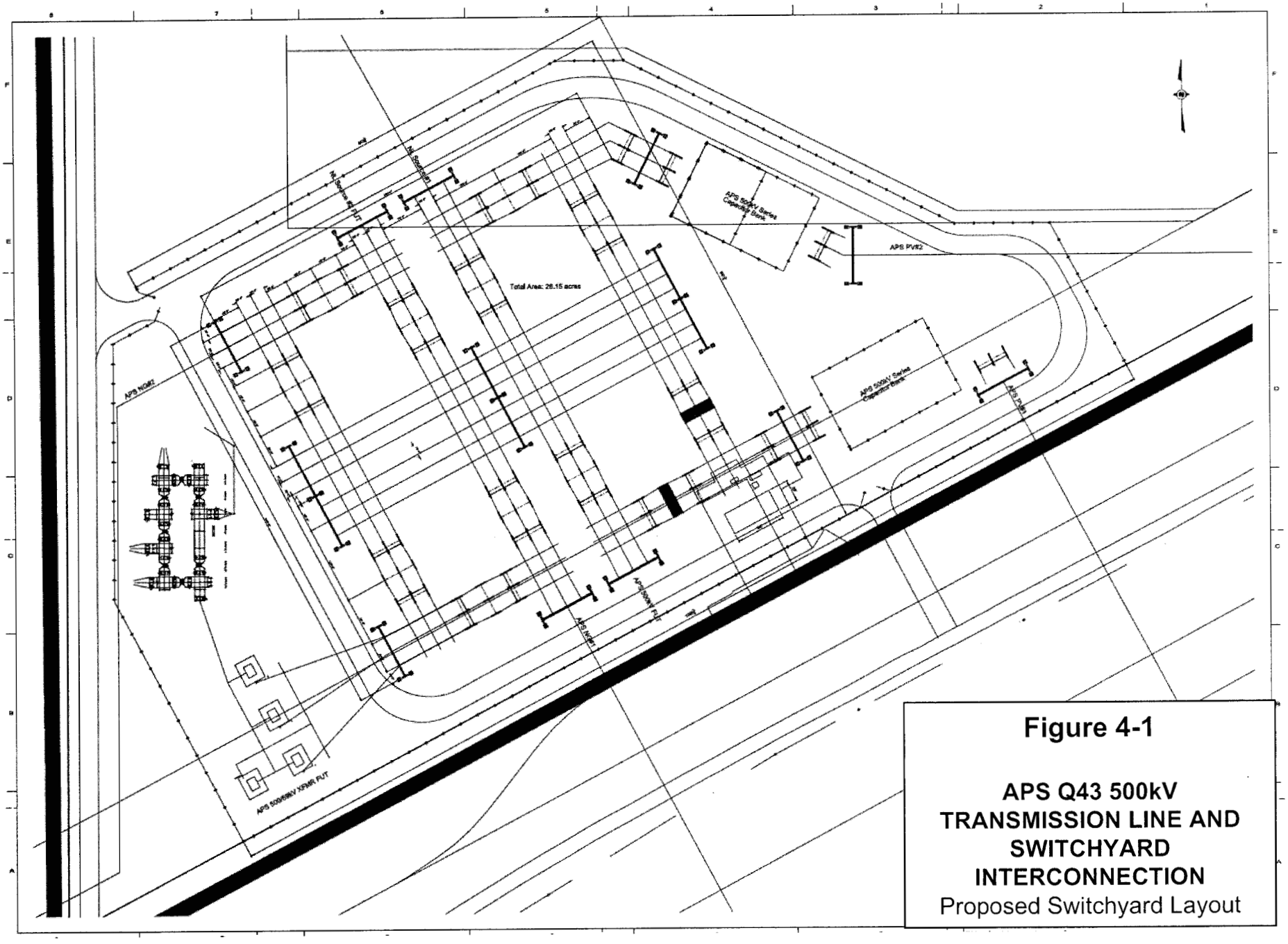

Figure 4-1

APS Q43 500kV TRANSMISSION LINE AND SWITCHYARD INTERCONNECTION

Proposed Switchyard Layout

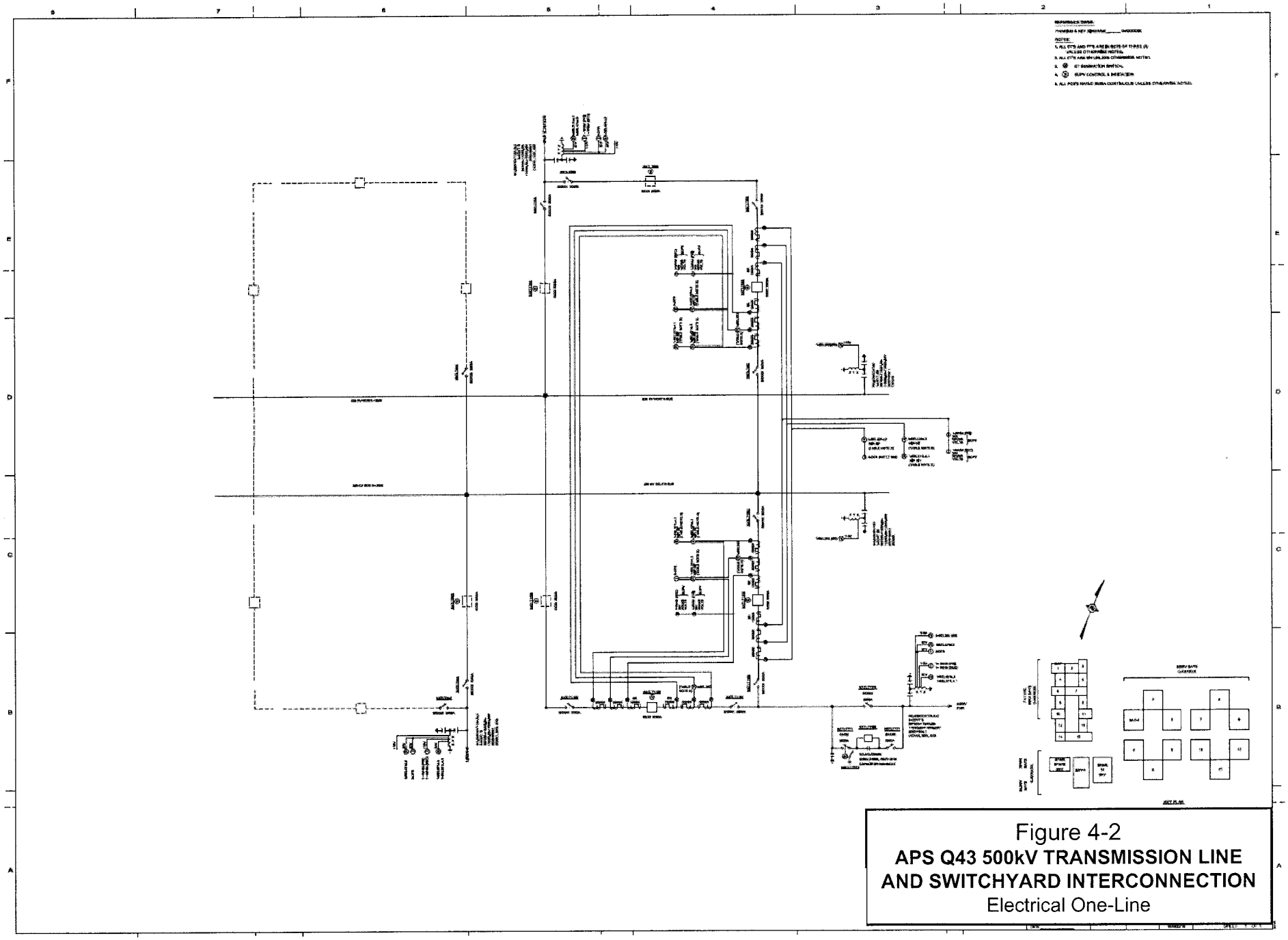

Figure 4-2
APS Q43 500kV TRANSMISSION LINE AND SWITCHYARD INTERCONNECTION
Electrical One-Line

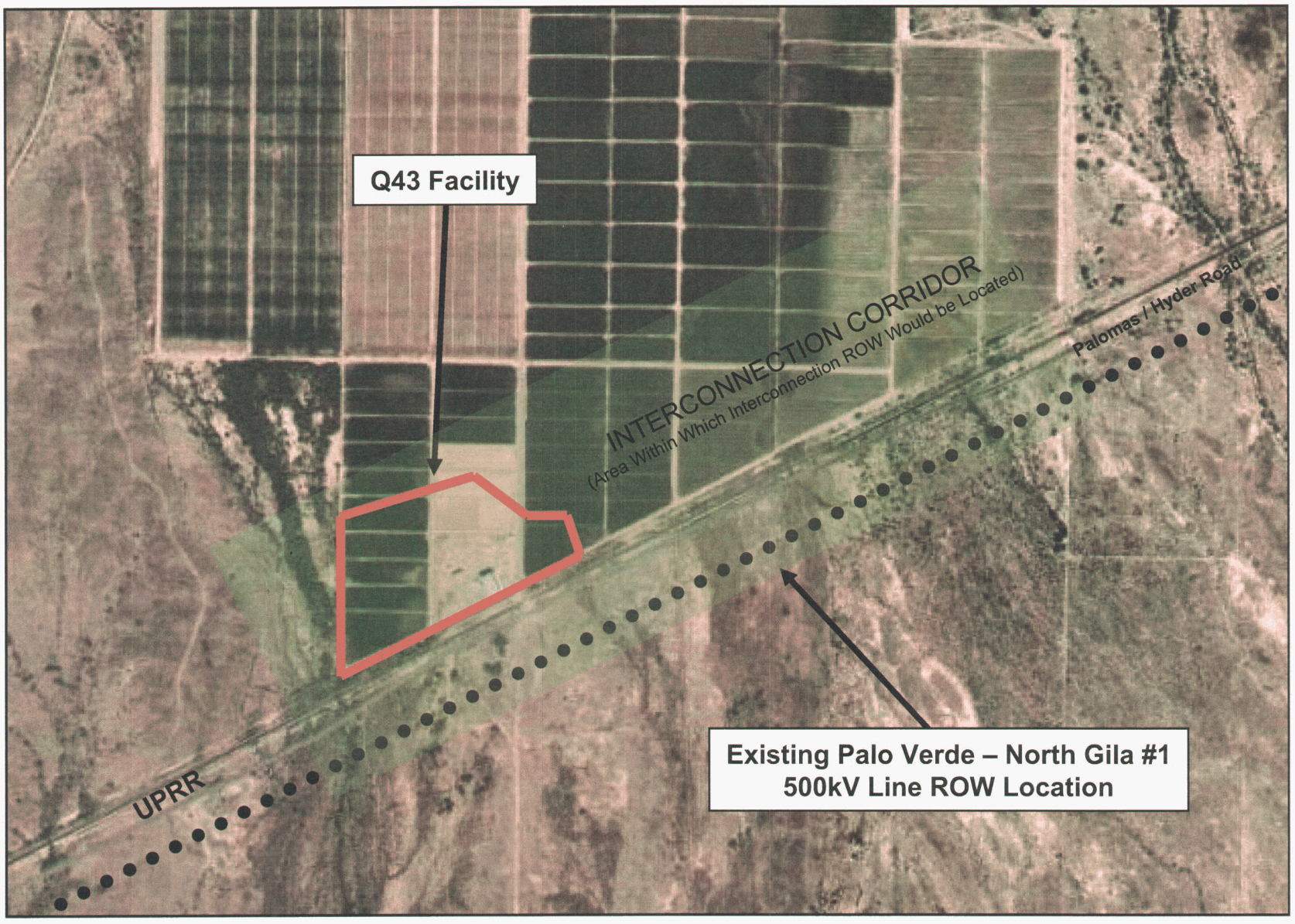

Figure 4-3 Interconnection ROW Corridor

Exhibit A

EXHIBIT A – PROJECT LOCATION AND LAND USE

As stated in Arizona Administrative Code R14-3-219:

> *"Where commercially available, a topographic map, 1:250,000 scale, showing the proposed plant site and the adjacent area within 20 miles thereof. If application is made for alternative plant sites, all sites may be shown on the same map, if practicable, designated by applicant's order of preference.*
>
> *Where commercially available, a topographic map, 1:62,500 scale, or each proposed plant site, showing the area within two miles thereof. The general land use plan within this area shall be shown on the map, which shall also show the areas of jurisdiction affected and any boundaries between such areas of jurisdiction. If the general land use plan is uniform throughout the area depicted, it may be described in the legend in lieu of an overlay."*

Figure A-1 depicts the proposed Project Site and jurisdictions within a 20-mile area on a topographic map (1:250,000 scale).

Figure A-2 depicts the Project Site and an area within 2 miles on a topographic map (1:62,500 scale).

Figure A-3 depicts existing land use within a 2-mile radius of the Project Site on aerial photograph (1:62,500 scale).

Figure A-4 depicts current planned Yuma County land use (2006) within two miles of the Project Site on an aerial photograph (1:62,500 scale).

PROJECT LOCATION

The Project Site is located in Section 34 of Township 5 South, Range 12 West and would cover approximately 30 acres. The existing Palomas Road and an inactive segment of the Union Pacific Railroad (UPRR) are adjacent to the southern boundary of the Project Site. The transmission interconnection between the switchyard and the existing Palo Verde - North Gila #1 500 kV transmission line would cross both the Palomas Road and the rail line.

JURISDICTIONS AND LAND OWNERSHIP

The jurisdiction regulating land use within the area around the Project Site is Yuma County. As depicted on **Figure A-2,** the Project Site is entirely private land and is located on a portion of the property that has been farmed for many decades known as the Whitewing Ranch. The Whitewing Ranch is surrounded by Bureau of Land Management (BLM) land and Arizona State Trust land on the east and west as well as some private land on the south.

The Project Site is located in an unincorporated part of Yuma County. As shown on **Figure A-1,** there are no municipal jurisdictions within 20-miles of the Project Site. The nearest municipalities are Wellton, Arizona about 43 miles to the west / southwest and Gila Bend, Arizona about 45 miles to the east.

The unincorporated community of Dateland is located approximately 10 miles south of the Project Site along Interstate-8.

EXISTING CONDITIONS

As shown on **Figure A-3**, the existing land use on the Project Site is agricultural. As stated earlier, the Whitewing Ranch has been historically farmed for many decades and most of the Property and nearly all of the Project Site has been previously disturbed for agriculture. Other nearby lands within the area are either vacant desert lands or agricultural lands, both inactive and active.

Palomas Road is the primary travel route within the area and runs northeast and southwest along the railroad. There are a number of local unimproved roads providing access to Whitewing Ranch and other nearby farms and other areas.

The existing Palo Verde - North Gila #1 500kV transmission line jointly owned by APS, SDG&E, and the Imperial Irrigation District generally parallels the railroad within the study area. There is also a fiber optic line that is located in the same corridor.

Interstate 8 is approximately 10 miles to the south of the Project Site.

Land Use Plans

As mentioned above, Yuma County is responsible for regulating land use on and around the Project Site. The Yuma County Comprehensive Plan 2010 was adopted in 2001 and updated in 2006. Yuma County annually updates the plan as necessary through the major plan amendment process.

Land use planning information for the area was gathered from Yuma County. This area is included within the Dateland/East County Planning Area. The Dateland/East County Planning Area is the largest of the four planning areas in Yuma County and consists primarily of agricultural lands and Sonoran desert. The existing communities in the planning area are characterized as small, remote and rural. Historically, Dateland and the entire East County area has had an economic base of farming, agricultural production and associated railroad activities. The planning area covers 554,156 acres or approximately 861 square miles, with less than 1% of the land area developed for residential uses. The majority of land within this planning area is under BLM jurisdiction and the private land is predominately in agricultural production or open desert.

The 2000 U.S. Census reported a population of 1,137 in this planning area. Between 1990 and 2000 the population of the Dateland/East County Planning Area declined by 295 individuals, a decrease of 20.6%. This contradicted the trend in Yuma County and Arizona as a whole for the same period, when the Yuma County population increased by 49.7% and the State of Arizona's population increased by 40%.

Currently, as shown on **Figure A-4**, the land use designation for the Project Site and surrounding areas is Agriculture/Rural Preservation (Yuma County Comprehensive Plan Land Use Map, 2006). The purpose of this land use element is resource preservation with emphasis on protecting and preserving agricultural, related resources and continued agricultural use.

Zoning

The Project Site and surrounding area is zoned Rural Area (RA)-40 by Yuma County. The RA-40 designation indicates a minimum lot size of 40 acres and allows for public or private utility installations for gas, electric, water, wastewater or communication generating or transmission facilities as special uses.

POTENTIAL EFFECTS

The Project will be consistent with the existing and planned land use designation and zoning for the Project Site and surrounding area. Development of electrical switchyards, substations and other transmission facilities such as the proposed Project is an allowed special use within RA zoning.

An application for a Special Use Permit (SUP) will be processed with Yuma County for the Project. Yuma County is expected to rule on the SUP application in 2009. Approval of the SUP will ensure that the Project is compatible with all applicable land use guidelines and zoning ordinances.

The Project will remove 30 acres from active agricultural development. There will be no other impacts on existing land use from the siting, construction, and operation of the Project because it will not preclude the agricultural and other uses on lands surrounding the Project Site.

REFERENCES

City of, Yuma and Yuma County. Joint Land Use Plan Adopted in 1996, and updated in 2007. [Online] Located at: http://www.co.yuma.az.us/dds/ord/2010/TC.htm Accessed November, 2008.

County of, Yuma. 2010 Comprehensive Plan Adopted in 2001, and updated in 2006. [Online] Located at: http://www.co.yuma.az.us/dds/ord/2010/Whole%20Plan.pdf Accessed November, 2008.

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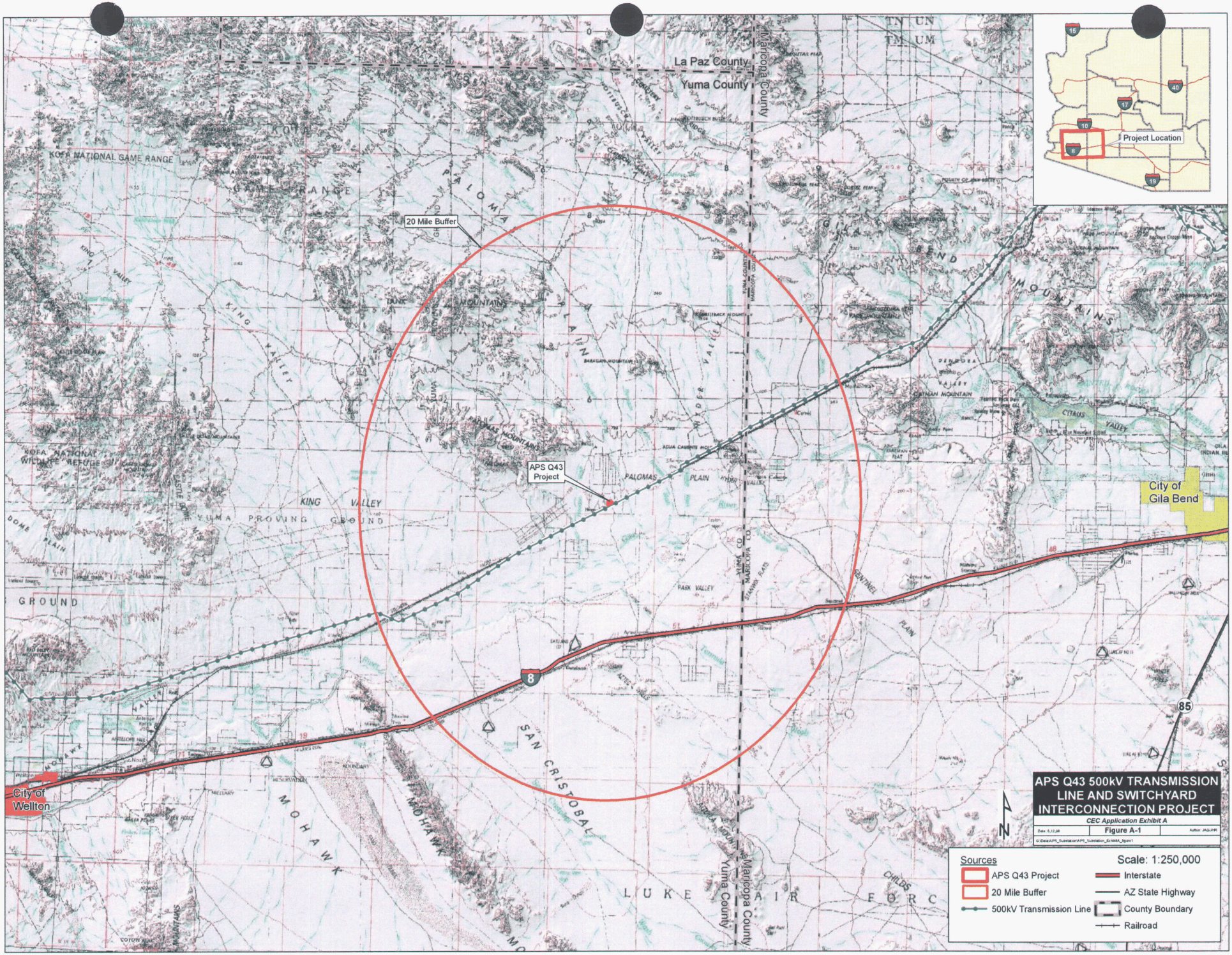
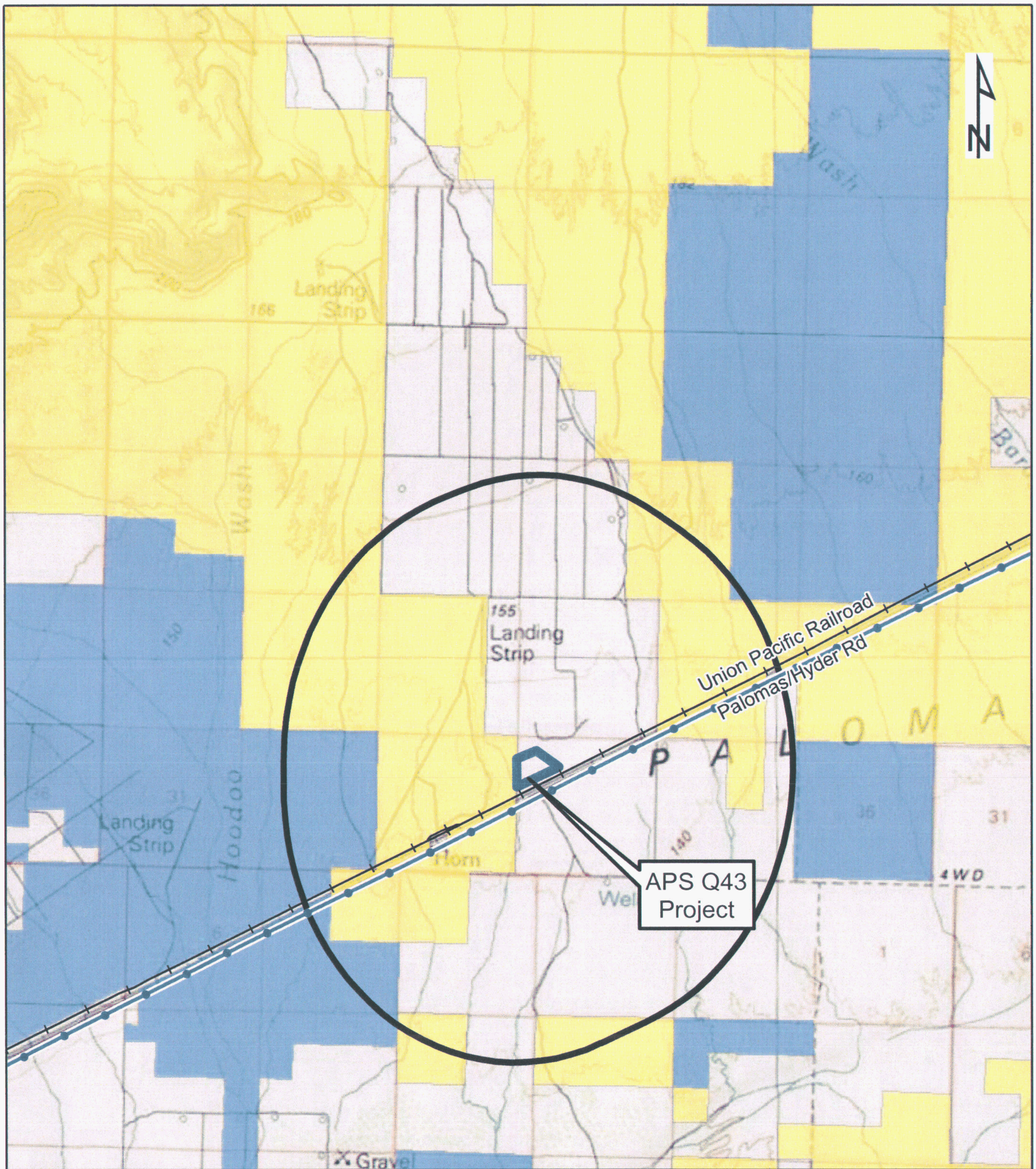
County of, Yuma. Yuma, AZ Profile. Communications Division of the Arizona Department of Commerce. 2002. [Online] Located at: http://www.co.yuma.az.us/pdf/yuma.pdf Accessed November, 2008.

Personal Communication. From Andrew Sangman, Yuma County Planning Department. Re: Land Use definitions. November 2008.


La Paz County
Yuma County
Maricopa County
KOFA NATIONAL GAME RANGE
20 Mile Buffer
APS Q43 Project
Project Location
City of Gila Bend
City of Wellton
KOFA NATIONAL WILDLIFE REFUGE
YUMA PROVING GROUND
GILA BEND MOUNTAINS
PALOMAS PLAIN
KING VALLEY
PARK VALLEY
SAN CRISTOBAL
MOHAWK
LUKE AIR FORCE
CITRUS VALLEY
SENTINEL PLAIN
APS Q43 500kV TRANSMISSION LINE AND SWITCHYARD INTERCONNECTION PROJECT
CEC Application Exhibit A
Figure A-1
Sources
APS Q43 Project
20 Mile Buffer
500kV Transmission Line
Interstate
AZ State Highway
County Boundary
Railroad
Scale: 1:250,000



APS Q43 Project
Project Study Area (2-mile Buffer)
500kV Transmission Line
Railroad

Land Ownership
BLM
Private
State Trust

Sources
Topo: USGS 100k quad

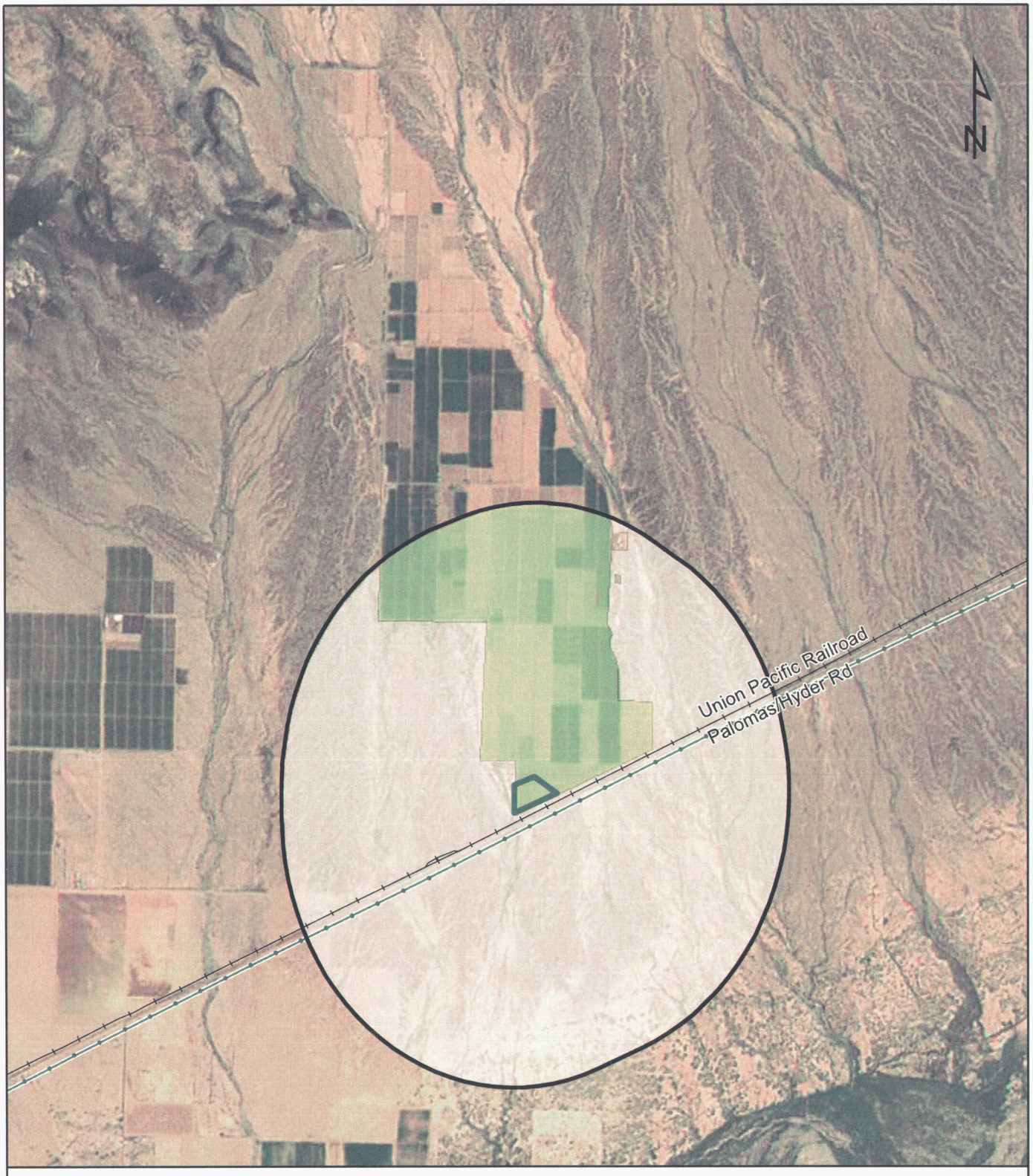
Miles
0 1
Scale: 1:62,500

APS Q43 500kV TRANSMISSION LINE AND SWITCHYARD INTERCONNECTION PROJECT

CEC Application Exhibit A

Date: 05.12.09	**Figure A-2**	Author: JAG/JHR

G:\Data\APS_Substation\APS_Substation_ExhibitA_figure2



APS Q43 Project

Project Study Area (2-mile Buffer)

500kV Transmission Line

Railroad

Existing Land Use

Agriculture

Vacant Land

Sources

Land Use Digitized from 2007 NAIP Aerial

0 1 Miles

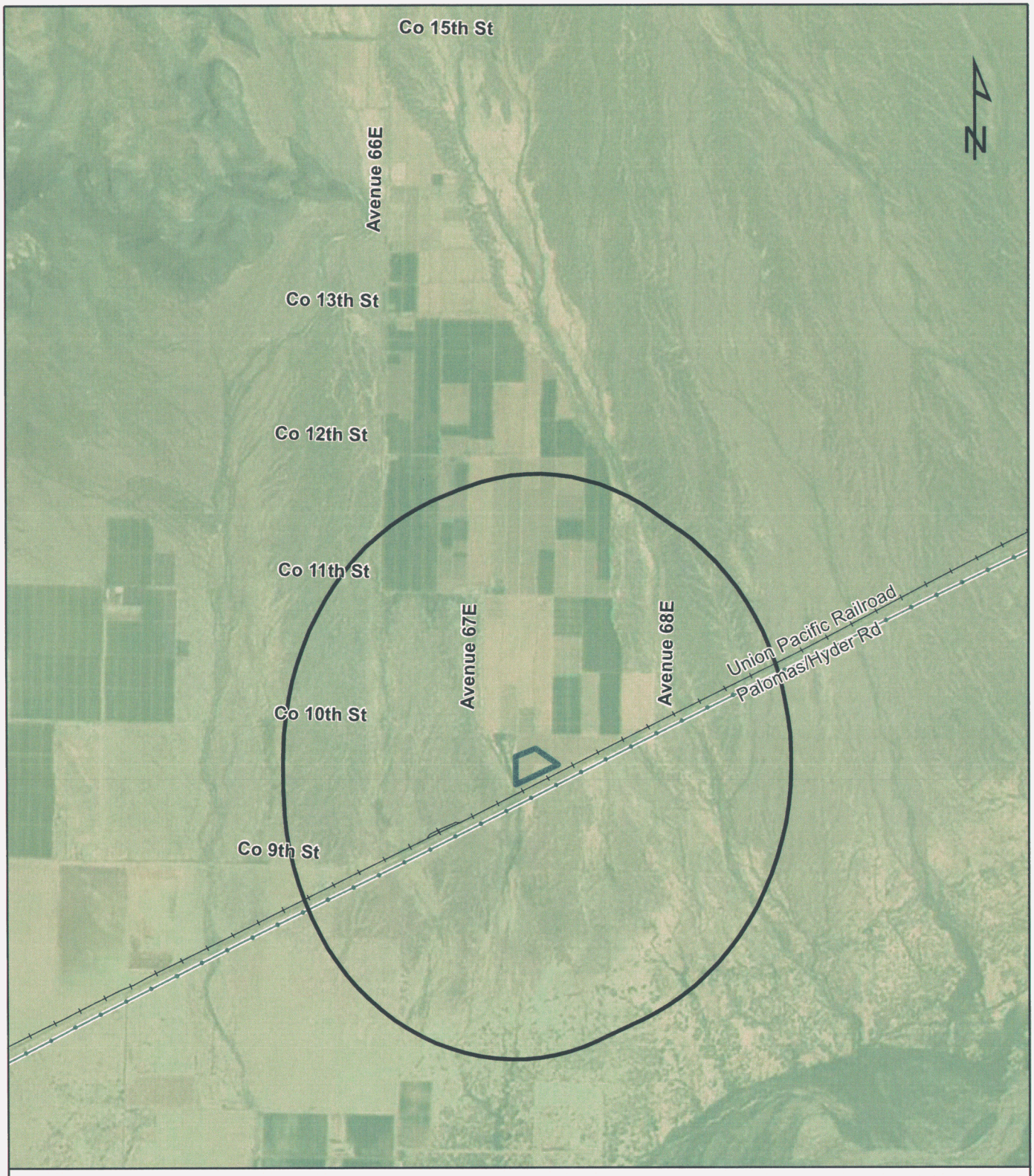
Scale: 1:62,500

APS Q43 500kV TRANSMISSION LINE AND SWITCHYARD INTERCONNECTION PROJECT

CEC Application Exhibit A

Date: 05.12.09	**Figure A-3**	Author: JAG/JHR

G:\Data\APS_Substation\APS_Substation_ExhibitA_figure3



2010 Comprensive Plan Land Use Designation

- Agriculture/Rural Preservation

- APS Q43 Project
- Project Study Area (2-mile Buffer)
- 500kV Transmission Line
- Railroad

Sources
Yuma County 2010 Comprehensive Plan (December 2001 [Revised July 2006])

0 1 Miles

Scale: 1:62,500

APS Q43 500kV TRANSMISSION LINE AND SWITCHYARD INTERCONNECTION PROJECT

CEC Application Exhibit A

Date: 05.12.09	**Figure A-4**	Author: JAG/JHR

G:\Data\APS_Substation\APS_Substation_ExhibitA_figure4

Exhibit B

EXHIBIT B – ENVIRONMENTAL STUDIES

As stated in Arizona Corporation Commission Rules of Practice and Procedure R14-3-219:

> *"Attach any environmental studies which applicant has made or obtained in connection with the proposed site(s) or route(s). If an environmental report has been prepared for any federal agency or if a federal agency has prepared an environmental statement pursuant to Section 102 of the National Environmental Policy Act, a copy shall be included as part of this exhibit."*

The Applicant has applied for or is preparing applications for the other permits needed for the Project. These permits are listed in **Table B-1**.

The results of other site surveys and environmental studies are discussed in subsequent exhibits of this Application. **Exhibit A** describes land use; **Exhibit C** addresses potential impacts to sensitive biological resources in the Project area; **Exhibit D** discusses potential impacts to other biological resources in the area; **Exhibit E** summarizes the potential effects on the area's scenic quality and cultural resources; **Exhibit F** summarizes the potential effects on recreation resources; **Exhibit H** describes how the Project could affect local plans; and **Exhibit I** discusses the noise impacts that are expected.

Table B-1
PERMITS/APPROVALS REQUIRED FOR APS Q43 SUSTATION

Permit/ Approval	Issuing Agency	Regulatory Authority	Project Milestone Required For	Process Synopsis	Schedule	Status
Certificate of Environmental Compatibility (CEC) State Siting Permit	Arizona Corporation Commission	Arizona Revised Statutes	Required before starting construction of the substation and interconnection lines	- Submit application for CEC - Review by Siting Committee - Siting Committee hearing -Submit supplemental information (if needed) -Approval by siting committee -Submitted to ACC - Approval by ACC	9 to 12 months	Application will be filed in 2009
Land Use Approval	Yuma County Development Services Planning & Zoning Division	County Code	Required before construction	- Submit land use / zoning request - Process as Special Use Permit - Reviewed by Planning and Zoning Department - Approved by Planning Commission	Processing time is 120 to 180 days	Application will be filed in 2009.
Stormwater Permits - For construction - For operation	Arizona DEQ - US EPA	Clean Water Act	Separate SWPPP required before construction of plant site and before operation of facility	- Prepare Stormwater Pollution Prevention Plan (SWPPP) -Submit NOI to both ADEQ and EPA	Prepare SWPP and submit NOI at least 48 hours before activity	NOI will be filed for construction in 2010 NOI will be filed for operation in 2011

Table B-1
PERMITS/APPROVALS REQUIRED FOR APS Q43 SUSTATION

Permit/ Approval	Issuing Agency	Regulatory Authority	Project Milestone Required For	Process Synopsis	Schedule	Status
Excavation/ Grading Permit	County Engineering	County Code	Required before construction of substation	- Submit site grading plan including erosion and stormwater control measures	Processing time about 1-2 months	
Permit for temporary construction facilities	County Planning & Zoning	County Code	Required before construction - before bringing construction trailers onto site	- Submit permit application	30 days	
Building Permits	County Engineering	County Code	Required before construction - before plant structures are constructed	- Develop plot plan for site - Have pre-application conference with Building Department and State Fire Marshall - Submit plans and specs to for each structure to Building Department (Planning & Zoning) - Reviewed by Building Department and Fire Marshall	60 to 90 days	
Encroachment Permit (to Build in Roadway)	County Public Works Department	County Code	Required before construction - before construction in County roadway (tra)	- Submit plans and specs showing all facilities that will be built in the roadways to include: the access road, both gas pipelines, water pipeline, buried electric line to wells	30 days	

Table B-1
PERMITS/APPROVALS REQUIRED FOR APS Q43 SUSTATION

Permit/ Approval	Issuing Agency	Regulatory Authority	Project Milestone Required For	Process Synopsis	Schedule	Status
Biological Evaluation	US Fish and Wildlife Service Arizona Game and Fish Department		Not a permit or approval but consultation required as part of CEC process	- Consult with USFWS and AGFD - Conduct surveys and complete required mitigation	Submitted and processed with CEC	
Cultural Resources Clearance	Arizona State Historic Preservation Office (SHPO)		Not a permit or approval but consultation required as part of CEC process	- Consult with SHPO as part of CEC - Submit plan for cultural resource surveys and mitigation - SHPO reviews and comments - Conduct clearance surveys and complete required mitigation	Submitted and processed with CEC	
Hazardous Waste Permits	Arizona DEQ	Resource Conservation and Recovery Act (RCRA)	Required before construction and operation if will generate sufficient amounts of hazardous wastes that need to be hauled away for disposal	- Apply to ADEQ for EPA identification number	Apply 30 days prior to operation	

Exhibit C

EXHIBIT C - AREAS OF BIOLOGICAL WEALTH

As stated in Arizona Corporation Commission Rules of Practice and Procedure R14-3-219:

> *Describe any areas in the vicinity of the proposed site or route which are unique because of biological wealth or because they are habitats for rare and endangered species. Describe the biological wealth or species involved and state effects, if any, the proposed facilities will have thereon.*

METHODS

Special status plant and wildlife species are subject to regulations under the authority of Federal and State agencies. Special status species related to the proposed Project include those species that are listed by the U.S. Fish and Wildlife Service (USFWS) as Federal endangered, threatened, proposed, or candidate species under the Endangered Species Act of 1973 (ESA), Section 4, as amended; listed as Wildlife of Special Concern by the Arizona Game and Fish Department (AGFD); or are protected under the Arizona Native Plant Law [Arizona Department of Agriculture (AZDA)]. Descriptions of special status species are listed below:

- Endangered species are those species in danger of extinction throughout all or a significant portion of their range.
- Threatened species are those species likely to become endangered in the foreseeable future.
- Proposed species are those species recommended for listing under Section 4 of the ESA.
- Candidate species are those species for which the USFWS has sufficient information on their biological status and threats to propose them as endangered or threatened under the ESA, but for which development of a proposed listing regulation is precluded by other higher priority listing activities. Candidate species are not protected under the ESA.
- USFWS Species of Concern is an informal term that refers to those species that the USFWS believes may be in need of concentrated conservation actions. Conservation actions, such as monitoring, vary depending on the health of the populations and degree and types of threats. USFWS Species of Concern receive no legal protection under the ESA and the use of the term does not necessarily mean that the species will eventually be proposed for listing as a threatened or endangered species.
- AGFD Wildlife of Special Concern are those species whose occurrence in Arizona is or may be in jeopardy, or with known or perceived threats or population declines, as described by the Arizona Game and Fish Department's listing of Wildlife of Special Concern in Arizona (WSCA, updated June 3, 2008).
- AZDA Highly Safeguarded or Salvage Restricted Native Plants. Special status plants are protected under the Arizona Native Plant Law (NPL) and fall into these categories: Highly Safeguarded (no collection allowed); Salvage Restricted (collection allowed only with

permit); Export Restricted (transport out of State prohibited); Salvage Assessed (permits required to remove live trees); and Harvest Restricted (permits required to remove plant by-products).

The USFWS has published a list of proposed, candidate, threatened, and endangered species occurring by county in Arizona (USFWS 2008a). In addition, the Arizona Game and Fish Department (AGFD) has published a list of special status species occurring by county in Arizona (AGFD 2008a) and a list of species occurrences by county (AGFD 2008b). These lists were consulted to provide a basis for special status species that might be present in the vicinity of the Project. **Table C-1** presents the special status species potentially occurring within the region, listed by common name, scientific name, and status.

The USFWS and AGFD have identified 12 plant species and 28 wildlife species (one fish, nine mammals, twelve birds, and six reptiles) with special status that have the potential to occur within Yuma County.

An AGFD On-line Project Evaluation Program (PEP) search was completed for the Project on November 18, 2008 (AGFD 2008d). The information provided in the PEP is used to guide preliminary decisions and assessments of proposed land development, management, and conservation projects, while incorporating fish and wildlife resource needs or features. The PEP indicated that there are no special status species or critical habitats that are known to occur within five miles of the Project Site. The PEP is provided in **Appendix C-1**.

In addition to the AGFD PEP search, letters were sent to AGFD and USFWS for the Agua Caliente Solar Project on the Whitewing Ranch. The Project is located on the same Property. This correspondence is included in **Appendix C-1**.

Prior to conducting fieldwork, aspects such as ecology and habitat requirements of each special status species were reviewed. Habitat conditions and wildlife observations on and around the Project Site were noted. Information including habitat requirements, known occurrences, and habitat types, was used to evaluate the potential for occurrence of each special status species and to analyze the potential effects of the Project.

Reconnaissance Surveys/Current Condition

A field reconnaissance was conducted in October, 2008 by a qualified field biologist to identify any special status species on or near the Whitewing Ranch including the Project Site. Habitats were evaluated and characterized during this field reconnaissance.

The proposed Project is located entirely on agricultural lands that have been actively cultivated for several decades, mostly in citrus and melon production. The Project Site is immediately adjacent to the southern boundary of the Whitewing Ranch and the inactive Union Pacific Railroad (UPRR) line. The existing Palo Verde - North Gila #1 500kV transmission line is located on the south side of the Palomas Road. Elevation is approximately 480 feet ASL.

While no known occurrences of special status species or critical habitats occur within five miles of the Project Site (as indicated above), the agricultural lands where the Project will be located do provide potential habitat for two special status species, Western Burrowing Owl and Loggerhead Shrike. It is possible that Burrowing Owls nest and forage on the Project Site and on adjacent lands, although none were observed during the field reconnaissance. The native desert areas surrounding the Project Site provide the best habitat for the Loggerhead Shrike, although the "edge areas" where desert meets agriculture also provide good habitat. This species has been confirmed to be breeding in this region (Corman and Wise-Gervais 2005) and may forage in the Project area, although none were observed during the field reconnaissance.

There are no suitable habitats for federally listed T&E plant or wildlife species on the Project Site. In addition, none of these species are known to occur within five miles of the Site (AGFD 2008d) and none were observed during the reconnaissance survey.

Several common species of birds were observed in the vicinity while conducting the field reconnaissance including Turkey Vulture (*Cathartes aura*), Mourning Dove (*Zanaida macroura*), White-winged Dove (*Zenaida asiatica*), Greater Roadrunner (*Geococcyx californianus*), American Kestrel (*Falco sparverius*), Cooper's Hawk (*Accipiter cooperii*), and Horned Lark (*Eremophila alpestris*). A zebra-tailed lizard (*Callisaurus draconoides*) was also observed in addition to mule deer (*Odocoileus hemionus*) tracks. No other wildlife was observed.

POTENTIAL EFFECTS

While the 12 plant species and 28 wildlife species and habitats described in the above sections have the potential to occur within Yuma County, there would be minimal potential impacts to nearly all of these species by Project construction and operations because the Project Site is used for agriculture and is actively disturbed. There would be minimal off-site impacts because the interconnection with the existing Palo Verde - North Gila #1 500kV transmission line via a loop in of this line would cross a railroad and County road which are also disturbed sites. In addition, after construction of the Project and adjacent solar projects, there would still be adjacent agriculture and native lands in the area for use by those two species that use such habitats.

Of the 40 special status species with the potential to occur in Yuma County, Arizona, none are recorded by the AGFD to occur within five miles of the Project Site (AGFD 2008d). Western Burrowing Owl and Loggerhead Shrike are the only species with potential habitat on the Project Site and in the immediate area. Potential impacts to these species are discussed below.

Plants

Of the 12 special status plant species having the potential to occur within Yuma County, none have been recorded on or within five miles of the Project Site (AGFD 2008d). Additionally, the elevation of the Project is outside of the range suitable for these plants and there is no suitable habitat at the Project Site. Therefore, the Project will have no impacts on these species and no mitigation measures would be needed to minimize effects of the Project on these species.

Wildlife

No special status wildlife species are recorded by AGFD occurring on or within five miles of the Project Site (AGFD 2008d). With the exception of the Western Burrowing Owl and Loggerhead Shrike, habitats for these species do not exist within five miles of the Project Site.

Suitable habitats for the Western Burrowing Owl and Loggerhead Shrike exist at and near the Project Site, although there are no documented occurrences of these species within five miles of the Project Site. Previous ground disturbances at the Project Site have cleared native vegetation and created suitable conditions for the burrowing owl. Burrowing owls may use the raised sides of canal roads and agricultural fields. Burrowing owls are active hunters during both day and night hours. They feed on flying insects, small mammals, reptiles, and birds. Hunting is done from perches, in flight, and from the ground and typically occurs within two acres of active burrow locations. They are predominately nonmigratory throughout most of their range in Arizona; however, they disperse widely. Northern Arizona populations are believed to be migratory. In non-migratory populations, such as those that may occur near the Project Site, they use and maintain burrows year-round. Home range size is approximately 2.0 acres (AGFD 2001c). Although no Western Burrowing Owls were observed during the reconnaissance survey, it is possible that they occupy burrows and forage at the Project Site.

To avoid these potential impacts to these species, lands within the Project Site will be surveyed for the presence of burrowing owls prior to construction. Any active burrows/nests found during the pre-construction survey will be mapped and qualified biologists will clear burrows of occupants and construct alternative burrows following guidelines proposed by AGFD (AGFD 2008e).

Implementation of the Project is not likely to negatively impact the Loggerhead Shrike because none of its habitat would be directly impacted. Because the Loggerhead Shrike likely forages in the agricultural fields, especially on the edges of the property, development of the Project may result in the loss of a small amount of foraging habitat but foraging habitats would still occur throughout the area.

Because no suitable habitats for the remainder of the special status species occur at or in the vicinity of the Project Site, it is also unlikely that these special status species will forage at the Project Site. No impacts to these species are expected.

CONCLUSIONS

The Project will be constructed primarily on active agricultural lands. These lands do not provide suitable habitat for the majority of the special status species listed in **Table C-1**. The two sensitive species that could potentially inhabit the lands that will be disturbed by this Project –Western Burrowing Owl and Loggerhead Shrike – would not be expected to be negatively affected because of the implementation of mitigation measures.

Table C-1. Special Status Species with the Potential to Occur in Yuma County, Arizona				
Species		Protection Status[1]		
Common name	Scientific name	ESA[2]	Arizona[3]	Potential to Occur at Project Site (Justification)[6]
Plants				
Parish Onion	*Allium parishii*		SR	No (Elevation)
Gander's Cryptantha	*Cryptantha gander*	SC		No (Habitat)
Clustered Barrel Cactus	*Echinocactus polycephalus* var. *polycephalus*		SR	No (Habitat)
Dune Spurge	*Euphorbia platysperma*	SC		No (Habitat)
California Barrel Cactus	*Ferocactus cylindraceus* var. *cylindraceus*		SR	No (Habitat)
Dune Sunflower	*Helianthus niveus ssp. Tephrodes*	SC		No (Habitat)
Senita	*Lophocereus schottii*		SR	No (Habitat)
Straw-top Cholla	*Opuntia echinocarpa*		SR	No (Elevation)
Sand Food	*Pholisma sonorae*	SC	HS	No (Habitat)
Kearney Sumac	*Rhus kearneyi*		SR	No (Elevation)
Blue Sand Lilly	*Triteleiopsis palmeri*		SR	No (Habitat)
California Fan Palm	*Washingtonia filifera*		SR	No (Habitat)
Mammals				
Pale Townsend's Big-eared Bat	*Corynorhinus townsendii Pallescens*	SC		No (Elevation)
Spotted Bat	*Euderma maculatum*	SC	WSC	No (Habitat)
Greater Western Mastiff Bat	*Eumops perotis californicus*	SC		No (Habitat)
Western Yellow Bat	*Lasiurus xanthinus*		WSC	No (Elevation)
Lesser Long-nosed Bat	*Leptonycteris curasoae yerbabuenae*	E	WSC	No (Habitat)
California Leaf-nosed Bat	*Macrotus californicus*	SC	WSC	No (Habitat)
Yuma Myotis	*Myotis yumanensis*	SC		No (Habitat)
Sonoran Pronghorn	*Antilocapra americana sonoriensis*	E	WSC	No (Habitat)
Yuma Hispid Cotton Rat	*Sigmodon hispidus eremicus*	SC		No (Habitat)
Fish				
Razorback Sucker	*Xyrauchen texanus*	E	WSC	No (Habitat)
Birds				
Great Egret	*Ardea alba*		WSC	No (Habitat)
Snowy Egret	*Egretta thula*		WSC	No (Habitat)
Western Yellow-billed Cuckoo	*Coccyzus americanusoccidentalis*	C	WSC	No (Habitat)
Southwestern Willow Flycatcher	*Empidonax trailli extimus*	E	WSC	No (Habitat)
Cactus Ferruginous Pygmy-owl	*Glaucidium brasilianium cactorum*	SC	WSC	No (Elevation)
Western Burrowing Owl	*Athene cunicularia hypugaea*	SC		Yes (None Observed)
Bald Eagle	*Haliaeetus leucocephalus*	T[4], DM, SC	WSC	No (Habitat)
Least Bittern	*Ixobrychus exilis*		WSC	No (Elevation)
California Brown Pelican	*Pelecanus occidentalis*	E, Proposed DM[5]		No (Habitat)
Yuma Clapper Rail	*Rallus longirostris yumanensis*	E	WSC	No (Habitat)
California Black Rail	*Laterallus jamaicensis coturniculus*	SC	WSC	No (Habitat)
Loggerhead Shrike	*Lanius ludovicianus*	SC		Yes (None Observed)
Reptiles				
Desert Rosy Boa	*Charina trivirgata gracia*	SC		No (Habitat)
Sonoran Desert Tortoise	*Gopherus agassizii (Sonoran population)*	SC	WSC	No (Habitat)
Banded Gila Monster	*Heloderma suspectum cinctum*	SC		No (Habitat)

Table C-1. Special Status Species with the Potential to Occur in Yuma County, Arizona				
Species		Protection Status[1]		
Common name	Scientific name	ESA[2]	Arizona[3]	Potential to Occur at Project Site (Justification)[6]
Flat-tailed Horned Lizard	*Phrynosoma mcallii*	SC	WSC	No (Habitat)
Arizona Chuckwalla	*Sauromalus ater* (Arizona Population)	SC		No (Habitat)
Yuman Desert Fringe-toed Lizard	*Uma rufopunctata*	SC	WSC	No (Habitat)

[1] E=Endangered, T=Threatened, C=Candidate, SC=Species of Concern, DM= Delisted taxon, recovered, and being monitored for the first five years, WSR=Wildlife of Special Concern, SR=Salvage Restricted, HS=Highly Safeguarded

[2] USFWS 2008a

[3] AGFD 2008a

[4] USFWS 2008b

[5] USFWS 2008c

[6] Elevation means the species does not have the potential to occur because the Project Site is not within its elevation requirements. Habitat means the Project Site is within the species elevation requirements but there is no suitable or potential habitat for the species. References are provided in the References Section.

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APPENDIX C-1

AGENCY CORRESPONDENCE

THE STATE OF ARIZONA
GAME AND FISH DEPARTMENT
5000 W. CAREFREE HIGHWAY
PHOENIX, AZ 85086-5000
(602) 942-3000 • WWW.AZGFD.GOV

December 18,2008

Mr. Patrick Golden
ENValue LLC
3225 Country Club Pkwy
Castle Rock, CO 80108

Re: Proposed Agua Caliente Solar Project in the Palomas Plains, Yuma County, Arizona

Dear Mr. Golden:

The Arizona Game and Fish Department (Department) has received your letter dated November 21, 2008, requesting any additional information regarding special status species within or near the Agua Caliente Solar Project (Agua Caliente) near Yuma, Arizona. The Department understands the Agua Caliente project proposes to construct and operate a solar generating station in the Palomas Plains at the base of Palomas Mountains. The facility will use parabolic trough solar thermal technology to generate up to 280 megawatts of power. The generating station will be located on approximately 2,200 acres of currently-irrigated farmland within sections 16, 21, 22, 27, 28, and 34 of Township 5 South, Range 12 West. The Department has the following comments for your consideration in preparation of an application for a Certificate of Environmental Compatibility for the State of Arizona and other environmental analyses.

The Department has concerns that the Agua Caliente project could negatively impact wildlife due to a reduction of water availability when irrigation ditches are removed to accommodate the project. In addition, converting the current land use from agriculture to solar energy production may impact wildlife and their habitat. The conversion of these agricultural fields into a solar generating station would substantially alter or eliminate approximately 2,200 acres of habitat currently available and utilized by various wildlife species. Agricultural fields, particularly grasses, grains, and alfalfa crops, are often utilized by a variety of wildlife species for food, water, cover, and nesting habitat. This particular area is known for its white-winged dove population which exists in the citrus trees. It is a prime hunting area for some of the Department's constituents. Therefore, the Department requests to meet with NextLight Renewables to discuss ways to mitigate our concerns.

The Department is also concerned about the potential use of settling ponds in the evaporative cooling component of the proposed project. If used, these ponds may draw waterfowl and other wildlife which could then be inadvertently poisoned due to concentrated salt and other minerals.

Department Recommendations

To minimize the potential impacts to wildlife habitat and populations resulting from the development and operation of the Agua Caliente project, the Department recommends NextLight Renewables and ENValue implement the following:

1. Project analysis should include evaluating the potential impacts to wildlife resulting from the conversion of 2,200 acres of farmland to a solar generating plant. If negative impacts are anticipated, the Department recommends implementing activities that could mitigate these impacts. Such activities may include, but are not limited to, planting and maintaining moist soils, grasses, grains, and alfalfa crops in nearby fields that are currently fallow to benefit migratory birds and other wildlife.
2. Project analysis should include a thorough evaluation of the anticipated impacts to water resources.
3. If implementing the proposed action involves any work within desert washes, rivers, or wetlands, we recommend contacting the U.S. Army Corps of Engineers, at the address provided below, regarding Clean Water Act issues, best management practices, and guidelines for minimizing and mitigating impacts to riparian areas:

   Ron Fowler
   U.S. Army Corps of Engineers, Regulatory Branch
   3636 N. Central Avenue, Suite 760
   Phoenix, AZ 85012-1936
   Phone: 602-640-5385
4. For any powerlines built for Agua Caliente:
   a. Proper design and construction of the transmission line is necessary to prevent or minimize risk of electrocution of raptors, owls, vultures, and golden or bald eagles, which are protected under state and federal laws.
   b. Limit project activities during the breeding season for birds, generally May through late August, depending on species in the local area (raptors breed in early February through May). Conduct avian surveys to determine bird species that may be utilizing the area and develop a plan to avoid disturbance during the nesting season.
   c. Coordinate plant salvage and revegetation efforts with the Arizona Department of Agriculture, in accordance with the Arizona Native Plant Law. A reclamation plan is recommended for disturbed sites, where appropriate, including planting native, weed-free seed and vegetation.

Thank you for the opportunity to provide comments on this proposed project. We look forward to continued communications with NextLight and ENValue regarding the project development and implementation. Please contact me at 623-236-7606 if you have any questions, or would like to further discuss our concerns and recommendations.

Sincerely,

Ginger Ritter

Ginger Ritter
Project Evaluation Project Specialist, Habitat Branch

cc: Laura Canaca, Project Evaluation Program Supervisor, Habitat Branch
Russ Engel, Habitat Program Supervisor, Region IV

AGFD #M08-11281449

United States Department of the Interior
U.S. Fish and Wildlife Service
Arizona Ecological Services Field Office
2321 West Royal Palm Road, Suite 103
Phoenix, Arizona 85021-4951
Telephone: (602) 242-0210 Fax: (602) 242-2513

In Reply Refer to:

AESO/SE
22410-2009-SL-0098

December 31,2008

Mr. Patrick Golden, Senior Biologist
ENValue LLC
3225 Country Club Parkway
Castle Rock, Colorado 80108

RE; Development and Operation of a Solar Powered Electric Generating Facility Known as NextLight Agua Caliente Solar Project, Located Approximately 10 Miles North of Dateland, Yuma County, Arizona

Dear Mr. Golden:

Thank you for your recent request for information on threatened or endangered species, or those that are proposed to be listed as such under the Endangered Species Act of 1973, as amended (Act), which may occur in your project area. The Arizona Ecological Service Field Office has posted lists of the endangered, threatened, proposed, and candidate species occurring in each of Arizona's 15 counties on the Internet. Please refer to the following web page for species information in the county where your project occurs:
http://www.fws.gav/so.uthwest/cs/arieonn

If you do not have access to the Internet or have difficulty obtaining a list, please contact our office and we will mail or fax you a list as soon as possible.

After opening the web page, find County Species Lists on the main page. Then click on the county of interest. The arrows on the left will guide you through information on species that are listed, proposed, candidates, or have conservation agreements. Here you will find information on the species' status, a physical description, all counties where the species occurs, habitat, elevation, and 'some general comments. Additional information can be obtained by going back to the main page. On the left side of the screen, click on Document Library, then click on Documents by Species, then click on the name of the species of interest to obtain General Species Information, or other documents that may be available. Click on the "Cactus" icon to view the desired document.

Mr. Patrick Golden, Senior Biologist

Please note that your project area may not necessarily include all or any of these species. The information provided includes general descriptions, habitat requirements, and other information for each species on the list. Under the General Species Information, citations for the Federal Register (FR) are included for each listed and proposed species. The FR is available at most Federal depository libraries. This information should assist you in determining which species may or may not occur within your project area. Site-specif c surveys could also be helpful and may be needed to verify the presence or absence of a species or its habitat as required for the evaluation of proposed project-related impacts.

Endangered and threatened species are protected by Federal law and must be considered prior to project development. If the action agency determines that listed species or critical habitat may be adversely affected by a federally funded, permitted, or authorized activity, the action agency will need to request formal consultation with us. If the action agency determines that the planned action may jeopardize a proposed species or destroy or adversely modify proposed critical habitat, the action agency will need to enter into a section 7 conference. The county list may also contain candidate or conservation agreement species. Candidate species are those for which there is sufficient information to support a proposal for listing; conservation agreement species are those for which we have entered into an agreement to protect the species and its habitat. Although candidate and conservation agreement species have no legal protection under the Act, we recommend that they be considered in the planning process in the event that they become listed or proposed for listing prior to project completion.

If any proposed action occurs in or near areas with trees and shrubs growing along watercourses, known as riparian habitat, we recommend the protection of these areas. Riparian areas are critical to biological community diversity and provide linear corridors important to migratory species. In addition, if the project will result in the deposition of dredged or fill materials into waterways, we recommend you contact the Army Corps of Engineers which regulates these activities under Section 404 of the Clean Water Act.

The State of Arizona and some of the Native American Tribes protect some plant and animal species not protected by Federal law. We recommend you contact the Arizona Game and Fish Department and the Arizona Department of Agriculture for State-listed or sensitive species, or contact the appropriate Native American Tribe to determine if sensitive species are protected by Tribal governments in your project area. We further recommend that you invite the Arizona Game and Fish Department and any Native American Tribes in or near your project area to participate in your informal or formal Section 7 Consultation process.

Mr. Patrick Golden, Senior Biologist

For additional communications regarding this project, please refer to consultation number 22410-2009-SL-0098. We appreciate your efforts to identify and avoid impacts to listed and sensitive species in your project area. If we may be of further assistance, please feel free to contact Brenda Smith (928) 226-0614 (x101) for projects in Northern Arizona, Debra Bills (602) 242-0210 (x239) for projects in central Arizona and along the Lower Colorado River, and Sherry Barrett (520) 670-6150 (x223) for projects in southern Arizona.

Sincerely,

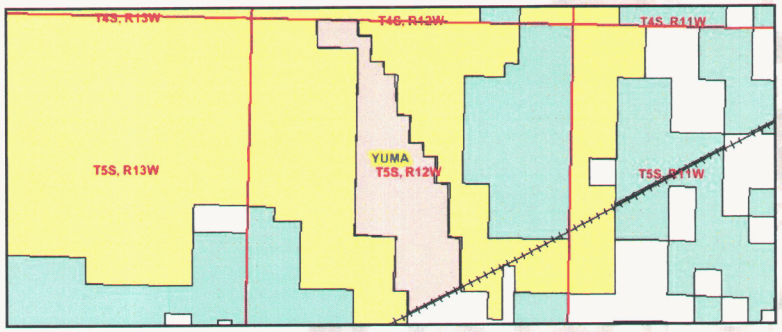
Steven L. Spangle
Field Supervisor

cc: Regional Supervisor, Arizona Game and Fish Department, Tucson, AZ
Assistant Field Supervisor, Fish and Wildlife Service, Tucson, AZ

W:\Cathy Gordon\administration\species ltrs\complete\ENValue LLC NextLight Agua Caliente Solar Project.docx

Arizona's On-line Environmental Review Tool
Search ID: 20081118007497
Project Name: Agua Caliente Solar
Date: 11/18/2008 11:51:18 AM

Project Location



Project Name: Agua Caliente Solar
Submitted By: Patrick Golden
On behalf of: PRIVATE
Project Search ID: 20081118007497
Date: 11/18/2008 11:51:11 AM
Project Category: Energy Storage/Production/Transfer,Energy Production (generation),solar power facility (new)
Project Coordinates (UTM Zone 12-NAD 83): 266642.491, 3652622.227 meter
Project Area: 3741.520 acres
Project Perimeter: 25467.860 meter
County: YUMA
USGS 7.5 Minute Quadrangle ID: 1418
Quadrangle Name: PALOMAS MOUNTAINS SE
Project locality is currently being scoped

Location Accuracy Disclaimer

Project locations are assumed to be both precise and accurate for the purposes of environmental review. The creator/owner of the Project Review Receipt is solely responsible for the project location and thus the correctness of the Project Review Receipt content.

The Department appreciates the opportunity to provide in-depth comments and project review when additional information or environmental documentation becomes available.

Special Status Species Occurrences/Critical Habitat/Tribal Lands within 5 miles of Project Vicinity:

No special status species were documented as occurring within the project vicinity. However, further field investigations of the project area are highly recommended. Site visits may reveal previously unrecorded resources of special concern in locations where they are currently undocumented.

No proposed or designated critical habitat is within the project vicinity.

No Indian tribal lands are within the project vicinity.

 APPLICATION INITIALS: _____

Please review the entire receipt for project type recommendations and/or species or location information and retain a copy for future reference. If any of the information you provided did not accurately reflect this project, or if project plans change, another review should be conducted, as this determination may not be valid.

Arizona's On-line Environmental Review Tool:

1. This On-line Environmental Review Tool inquiry has generated recommendations regarding the potential impacts of your project on Special Status Species (SSS) and other wildlife of Arizona. SSS include all U.S. Fish and Wildlife Service federally listed, U.S. Bureau of Land Management sensitive, U.S. Forest Service sensitive, and Arizona Game and Fish Department (Department) recognized species of concern.
2. These recommendations have been made by the Department, under authority of Arizona Revised Statutes Title 5 (Amusements and Sports), 17 (Game and Fish), and 28 (Transportation). These recommendations are preliminary in scope, designed to provide early considerations for all species of wildlife, pertinent to the project type you entered.
3. This receipt, generated by the automated On-line Environmental Review Tool does not constitute an official project review by Department biologists and planners. Further coordination may be necessary as appropriate under the National Environmental Policy Act (NEPA) and/or the Endangered Species Act (ESA).

The U.S. Fish and Wildlife Service (USFWS) has regulatory authority over all federally listed species under the ESA. Contact USFWS Ecological Services Offices: http://arizonaes.fws.gov/.

Phoenix Main Office
2321 W. Royal Palm Road, Suite 103
Phoenix, AZ 85021
Phone 602-242-0210
Fax 602-242-2513

Tucson Sub-Office
201 North Bonita, Suite 141
Tucson, AZ 85745
Phone 520-670-6144
Fax 520-670-6154

Flagstaff Sub-Office
323 N. Leroux Street, Suite 101
Flagstaff, AZ 86001
Phone 928-226-0614
Fax 928-226-1099

Disclaimer:

1. This is a preliminary environmental screening tool. It is not a substitute for the potential knowledge gained by having a biologist conduct a field survey of the project area.
2. The Department's Heritage Data Management System (HDMS) data is not intended to include potential distribution of special status species. Arizona is large and diverse with plants, animals, and environmental conditions that are ever changing. Consequently, many areas may contain species that biologists do not know about or species previously noted in a particular area may no longer occur there.
3. Not all of Arizona has been surveyed for special status species, and surveys that have been conducted have varied greatly in scope and intensity. Such surveys may reveal previously undocumented population of species of special concern.
4. HDMS data contains information about species occurrences that have actually been reported to the Department.

Arizona Game and Fish Department Mission

To conserve, enhance, and restore Arizona's diverse wildlife resources and habitats through aggressive protection and

 APPLICATION INITIALS: _____

management programs, and to provide wildlife resources and safe watercraft and off-highway vehicle recreation for the enjoyment, appreciation, and use by present and future generations.

Project Category: Energy Storage/Production/Transfer,Energy Production (generation),solar power facility (new)

Project Type Recommendations:

Based on the project type entered; coordination with State Historic Preservation Office may be required http://www.pr.state.az.us/partnerships/shpo/shpo.html#anchor561695

During planning and construction, minimize potential introduction or spread of exotic invasive species. Invasive species can be plants, animals (exotic snails), and other organisms (e.g. microbes), which may cause alteration to ecological functions or compete with or prey upon native species and can cause social impacts (e.g. livestock forage reduction, increase wildfire risk). The terms noxious weed or invasive plants are often used interchangeably. Precautions should be taken to wash all equipment utilized in the project activities before and after project activities to reduce the spread of invasive species. Arizona has noxious weed regulations (Arizona Revised Statutes, Rules R3-4-244 and R3-4-245). See Arizona Department of Agriculture website for restricted plants http://www.azda.gov/PSD/quarantine5.htm. Additionally, the U.S. Department of Agriculture has information regarding pest and invasive plant control methods including: pesticide, herbicide, biological control agents, and mechanical control: http://www.usda.gov/wps/portal/usdahome. The Department regulates the importation, purchasing, and transportation of wildlife and fish (Restricted Live Wildlife), please refer to the hunting regulations for further information http://www.azgfd.gov/h_f/hunting_rules.shtml.

During the planning stages of your project, please consider the local or regional needs of wildlife in regards to movement, connectivity, and access to habitat needs. Loss of this permeability prevents wildlife from accessing resources, finding mates, reduces gene flow, prevents wildlife from re-colonizing areas where local extirpations may have occurred, and ultimately prevents wildlife from contributing to ecosystem functions, such as pollination, seed dispersal, control of prey numbers, and resistance to invasive species. In many cases, streams and washes provide natural movement corridors for wildlife and should be maintained in their natural state. Uplands also support a large diversity of species, and should be contained within important wildlife movement corridors. In addition, maintaining biodiversity and ecosystem functions can be facilitated through improving designs of structures, fences, roadways, and culverts to promote passage for a variety of wildlife.

Recommendations Disclaimer:

1. Potential impacts to fish and wildlife resources may be minimized or avoided by the recommendations generated from information submitted for your proposed project.
2. These recommendations are proposed actions or guidelines to be considered during **preliminary project development**.
3. Additional site specific recommendations may be proposed during further NEPA/ESA analysis or through coordination with affected agencies.
4. Making this information directly available does not substitute for the Department's review of project proposals, and should not decrease our opportunity to review and evaluate additional project information and/or

 APPLICATION INITIALS: _____

new project proposals.
5. The Department is interested in the conservation of all fish and wildlife resources, including those Special Status Species listed on this receipt, and those that may have not been documented within the project vicinity as well as other game and nongame wildlife.
6. **Further coordination requires the submittal of this initialed and signed Environmental Review Receipt with a cover letter and project plans or documentation that includes project narrative, acreage to be impacted, how construction or project activity(s) are to be accomplished, and project locality information (including site map).**
7. Upon receiving information by AZGFD, please allow 30 days for completion of project reviews. Mail requests to:

Project Evaluation Program, Habitat Branch
Arizona Game and Fish Department
5000 West Carefree Highway
Phoenix, Arizona 85086-5000
Phone Number: (623) 236-7600
Fax Number: (623) 236-7366

Terms of Use

By using this site, you acknowledge that you have read and understand the terms of use. Department staff may revise these terms periodically. If you continue to use our website after we post changes to these terms, it will mean that you accept such changes. If at any time you do not wish to accept the Terms, you may choose not to use the website.

1. This Environmental Review and project planning website was developed and intended for the purpose of screening projects for potential impacts on resources of special concern. By indicating your agreement to the terms of use for this website, you warrant that you will not use this website for any other purpose.
2. Unauthorized attempts to upload information or change information on this website are strictly prohibited and may be punishable under the Computer Fraud and Abuse Act of 1986 and/or the National Information Infrastructure Protection Act .
3. The Department reserves the right at any time, without notice, to enhance, modify, alter, or suspend the website and to terminate or restrict your access to the website.
4. This Environmental Review is based on the project study area that was entered. The review must be redone if the project study area, location, or the type of project changes. If additional information becomes available, this review may need to be reconsidered.
5. A signed and initialed copy of the Environmental Review Receipt indicates that the entire receipt has been read by the signer of the Environmental Review Receipt.

Security:

The Environmental Review and project planning web application operates on a complex State computer system. This system is monitored to ensure proper operation, to verify the functioning of applicable security features, and for other like purposes. Anyone using this system expressly consents to such monitoring and is advised that if such monitoring reveals possible evidence of criminal activity, system personnel may provide the evidence of such monitoring to law enforcement officials. Unauthorized attempts to upload or change information; to defeat or circumvent security measures; or to utilize this system for other than its intended purposes are prohibited.

This website maintains a record of each environmental review search result as well as all contact information. This information is maintained for internal tracking purposes. Information collected in this application will not be shared outside of the purposes of the Department.

If the Environmental Review Receipt and supporting material are not mailed to the Department or other appropriate agencies within six (6) months of the Project Review Receipt date, the receipt is considered to be null and void, and a new review must be initiated.

 APPLICATION INITIALS: _____

Print this Environmental Review Receipt using your Internet browser's print function and keep it for your records. Signature of this receipt indicates the signer has read and understands the information provided.

Signature:_____

Date: _____

Proposed Date of Implementation: _____

Please provide point of contact information regarding this Environmental Review.

Application or organization responsible for project implementation

Agency/organization:_____

Contact Name: _____

Address: _____

City, State, Zip: _____

Phone: _____

E-mail: _____

Person Conducting Search (if not applicant)

Agency/organization:_____

Contact Name: _____

Address: _____

City, State, Zip: _____

Phone: _____

E-mail: _____

 APPLICATION INITIALS: _____

Exhibit D

EXHIBIT D - BIOLOGICAL RESOURCES

As stated in Arizona Corporation Commission Rules of Practice and Procedure R14-3-219:

> *"List the fish, wildlife, plant life and associated forms of life associated with the vicinity of the proposed sites or route and describe the effects, if any, other proposed facilities will have thereon."*

METHODS / CURRENT CONDITIONS

The Project would occupy approximately 30 acres of the Whitewing Ranch property which includes about 3,800 acres of private agricultural land. The Project Site is immediately adjacent to the inactive Union Pacific Railroad (UPRR) line and the Palo Verde - North Gila #1 500kV transmission line is located just south on the south side of the Palomas Road.

The Whitewing Ranch is surrounded by BLM lands consisting of Sonoran Desertscrub habitats on the east and west and parts of the Whitewing Ranch will remain in agricultural production on the north while other portions are planned to be developed for solar energy (Agua Caliente Solar Project). The Project Site consists of agricultural lands that are actively farmed, mostly citrus and melon in current production. Elevation is approximately 480 feet ASL.

The area surrounding the Project Site is largely vacant and undeveloped with some agricultural use. The agricultural areas have been farmed for decades. Most of the surrounding area contains native habitats, although they have been disturbed. These lands are broken up by numerous roads, largely resulting from U.S. Border Patrol activities. The landowner indicated that there is game hunting on surrounding BLM lands but hunting is prohibited on the Whitewing Ranch.

A qualified biologist conducted on-the-ground field reconnaissance of the Project Site and evaluated the surrounding area during October 2008. Prior to conducting fieldwork, aspects such as ecology and habitat requirements of various species were reviewed. Habitat conditions and wildlife observations on and around the Project Site were recorded. Information including habitat requirements, known occurrences, and habitat types, was used to evaluate the potential effects of Project implementation on biological resources within the vicinity of the Project.

Tables D-1, D-2, D-3, and **D-4** contain lists of common plant life, mammals, birds, reptiles and amphibians potentially present in Yuma County and within the vicinity of the Project Site. **Table D-3** specifically lists the species noted during a breeding bird survey conducted by AGFD near the Project Site (Corman 2008).

Vegetation

Table D-1 presents a list of common plant species that potentially could occur or have been recorded in the vicinity of the Project Site. Native Sonoran Desert vegetation communities in this part of the Sonoran Desert are dominated by what is characterized as the Sonoran Desertscrub Ecosystem (Brown 1994). The Lower Colorado River Valley Subdivision – Creosotebush-White Bursage Series is the dominant native feature on native lands in the surrounding area. Ephemeral drainages (xeroriparian areas) also occur in two significant washes: Hoodoo Wash is located about one mile west of the Project Site, and Baragan Wash is located about 2.5 miles east of the Project Site. There are no washes on the Project Site.

The Lower Colorado River Valley Subdivision is the driest of the Sonoran Desert subdivisions. Plant growth is typically both open and simple. The most common plant association in this subdivision is the Creosote Bush-White Bursage Series. Species commonly found along drainages and on flats include creosote bush (*Larrea tridentata*), white bursage (*Ambrosia dumosa*), honey mesquite (*Prosopis glandulosa*), ironwood (*Olneya tesota*), blue palo verde (*Cercidium floridum*), foothills paloverde (*Cercidium microphyllum*), smoketree (*Psorothamnus spinosus*), ocotillo (*Fouquieria splendens*), brittlebush (*Encelia farinosa*), and saguaro (*Carnegiea gigantea*). Other shrub species in this series include four-wing saltbush (*Atriplex canensens*), brittlebush (*Encelia farinose*), and burroweed (*Isocoma tenueseca*). Cactus species including barrel cactus (*Ferrocactus wislizenii*) and jumping cholla (*Opuntia bigelovii*) can also found in low densities.

Xeroriparian areas in the surrounding native habitats support stands of catclaw (*Acacia greggii*), ironwood, or complex mixes of mesquite-catclaw-desert willow and a variety of other shrubs.

The Arizona Native Plant Law (NPL) states that if protected native plant species are to be destroyed or removed, the property owner must contact the Arizona Department of Agriculture prior to such actions. This process does not restrict the removal of such species on private property, but is meant to encourage the salvage of these plants when possible. There are no salvage restricted species protected under the NPL that have the potential to occur at the Project Site (refer to Exhibit C).

Wildlife

Wildlife resources that have the potential to occur within the vicinity of the Project Site are predominantly associated with Sonoran Desertscrub habitats and agricultural lands. Species occurrence, abundance, and distribution are strongly influenced by the presence of surface water, topography, and habitat types within and surrounding the Project Site which contains irrigated agricultural land and the surrounding lands are dominated by creosote bush uplands with palo verde and ironwood dominating washes with a low density of saguaro. **Tables D-2, D-3,** and **D-4** present common mammals, birds, reptiles and amphibians that have potential to occur or have been recorded in the vicinity of the Project Site.

Several common species of birds were observed in the vicinity while conducting the field reconnaissance including Turkey Vulture (*Cathartes aura*), Mourning Dove (*Zanaida macroura*), White-winged Dove (*Zenaida asiatica*), Greater Roadrunner (*Geococcyx californianus*), American Kestrel (*Falco sparverius*), Cooper's Hawk (*Accipiter cooperii*), and Horned Lark (*Eremophila alpestris*). A zebra-tailed lizard (*Callisaurus draconoides*) was also observed in addition to mule deer (*Odocoileus hemionus*) tracks. No other wildlife was observed.

POTENTIAL EFFECTS

While many of the plant and wildlife species described in the **Tables D-1**, **D-2**, **D-3**, and **D-4** have the potential to occur within Yuma County, there would be minimal or negligible potential impacts to these species by Project construction and operations because the Project Site is currently used mainly for agriculture and is actively disturbed. There would be minimal off-site impacts because all transmission interconnections would be located on this already disturbed Project Site. In addition, the tie in with the existing Palo Verde - North Gila #1 500kV transmission line would also be routed across disturbed areas associated with the existing railroad and County road between the Project and the existing line. In addition, after construction of the Project, there would still be adjacent agriculture and Sonoran Desertscrub habitats in the area for use by those species that use such habitats.

Non-native, weedy, and crop species typically dominate disturbed agricultural lands, irrigation canals, and disturbed native habitats. It is possible that some noxious weeds are present in disturbed areas in the area, but none were observed during the reconnaissance survey. Because the Project Site is already disturbed, development of the Project is not expected to increase the potential for noxious weeds.

CONCLUSIONS

The proposed Project Site has been actively farmed for decades and contains no native habitats. The short loop-in interconnection associated with the Project will also be located on disturbed lands, so no native habitats offsite would be affected by them. The wildlife and bird species that utilize agricultural lands for foraging or cover habitat would not be expected to be negatively affected by the Project because of the similar agricultural land and the Sonoran Desertscrub habitats that would remain in the vicinity.

Table D-1 Common Plant Species Potential Occurrence in Native Habitats in the Vicinity of the Project Site[1]		
Common Name	**Scientific Name**	**Ecosystem**
Triangleleaf bursage	*Ambrosia deltoidea*	Sonoran Desertscrub, Sonoran Riparian
White bursage	*Ambrosia dumosa*	Sonoran Desertscrub
Fiddlehead	*Amsinckia intermedia*	Sonoran Riparian
Purple three-awn	*Aristida purpurea*	Sonoran Desertscrub
Four-wing saltbush	*Atriplex canescens*	Sonoran Desertscrub
All scale	*Atriplex polycarpa*	Sonoran Desertscrub
Datura	*Datura stramonium*	Sonoran Riparian
Englemann's hedgehog cactus	*Echinocereus englemannii*	Sonoran Desertscrub
Brittlebush	*Encelia farinosa*	Sonoran Desertscrub, Sonoran Riparian
Skeletonweed	*Eriogonum deflexum*	Sonoran Desertscrub
Filaree	*Erodium cicutarium*	Sonoran Desertscrub
Barrel cactus	*Ferocactus wislizenii*	Sonoran Desertscrub
Ocotillo	*Fouquieria splendens*	Sonoran Desertscrub
Rhatany	*Krameria parviflora*	Sonoran Desertscrub, Sonoran Riparian
Creosote bush	*Larrea tridentata*	Sonoran Desertscrub, Sonoran Riparian
Wolfberry	*Lycium spp.*	Sonoran Desertscrub, Sonoran Riparian
Little fishhook cactus	*Mammillaria thornberi*	Sonoran Desertscrub
Teddybear cholla	*Opuntia bigelovii*	Sonoran Desertscrub
Prickly pear cactus	*Opuntia engelmannii*	Sonoran Desertscrub
Jumping cholla	*Opuntia fulgida*	Sonoran Desertscrub
Desert mistletoe	*Phoradendron californicum*	Sonoran Desertscrub
Galleta grass	*Pleuraphis jamesii*	Sonoran Desertscrub, Sonoran Riparian
Mesquite	*Prosopis spp.*	Sonoran Riparian
Bladdersage	*Salazaria mexicana*	Sonoran Desertscrub
Russian thistle	*Salsola iberica*	Sonoran Desertscrub, Sonoran Riparian
London rocket	*Sisymbrium irio*	Sonoran Desertscrub, Sonoran Riparian
Globe mallow	*Sphaeralcea spp.*	Sonoran Desertscrub, Sonoran Riparian

[1] *Brown 1994*

Table D-2 Mammal Species Potential Occurrence in the Vicinity of the Project Site[1]	
Common Name	**Scientific Name**
Harris' antelope squirrel	*Ammospermophilus harrisii*
Pallid bat	*Antrozous pallidus*
Coyote	*Canis latrans*
Desert kangaroo rat	*Dipodomys deserti*
Merriam's kangaroo rat	*Dipodomys merriami*
Big brown bat	*Eptesicus fuscus*
Spotted bat	*Euderma maculatum*
Bobcat	*Felis rufus*
Southern yellow bat	*Lasiurus ega xanthinus*
Black-tailed jackrabbit	*Lepus californicus*
California myotis	*Myotis californicus*
Cave myotis	*Myotis velifer*
White-throated wood rat	*Neotoma albigula*
Desert wood rat	*Neotoma lepida*
Desert mule deer	*Odocoileus hemionus crooki*
Muskrat	*Ondatra zibethicus*
Southern grasshopper mouse	*Onychomys torridus*
Arizona pocket mouse	*Perognathus amplus*
Bailey's pocket mouse	*Perognathus baileyi*
Rock pocket mouse	*Perognathus intermedius*
Little pocket gopher	*Perognathus longimembris*
Desert pocket mouse	*Perognathus penicillatus*
Canyon mouse	*Permyscus crinitus*
Cactus mouse	*Peromyscus eremicus*
Deer mouse	*Peromyscus maniculatus*
Western pipistrelle	*Pipistrellus Hesperus*
Raccoon	*Procyon lotor*
Western harvest mouse	*Reithrodontomys megalotis*
Round-tailed ground squirrel	*Spermophilus tereticaudus*
Western spotted skunk	*Spilogale gracilis*
Desert cottontail	*Sylvilagus audubonii*
American free-tailed bat	*Tadarida brasiliensis*
Pocketed free-tailed bat	*Tadarida femorosacca*
Big free-tailed bat	*Tadarida macrotis*
Badger	*Taxidae taxus*
Botta's pocket gopher	*Thomomys bottae*
Kit fox	*Vulpes macrotis*

[1] *Hoffmeister 1986.*

Table D-3 Bird Species Potential Occurrence in the Vicinity of the Project Site[1]	
Common Name	**Scientific Name**
Cooper's Hawk	*Accipiter cooperii*
White-throated Swift	*Aeronautes saxatalis*
Red-winged Blackbird	*Agelaius phoeniceus*
Black-throated Sparrow	*Amphispiza bilineata*
Cinnamon Teal	*Anas cyanoptera*
Black-chinned Hummingbird	*Archilochus alexandri*
Western Burrowing Owl	*Athene cunicularia hypugaea*
Verdin	*Auriparus flaviceps*
Great Horned Owl	*Bubo virginianus*
Red-tailed Hawk	*Buteo jamaicensis*
Lark Bunting	*Calamospiza melanocorys*
Gambel's Quail	*Callipepla gambelii*
Anna's Hummingbird	*Calypte anna*
Costa's Hummingbird	*Calypte costae*
Cactus Wren	*Campylorhynchus brunneicapillus*
Northern Cardinal	*Cardinalis cardinalis*
Pyrrhuloxia	*Cardinalis sinuatus*
Lesser Goldfinch	*Carduelis arealtria*
House Finch	*Carpodacus mexicanus*
Turkey Vulture	*Cathartes aura*
Hermit Thrush	*Catharus guttatus*
Canyon Wren	*Catherpes mexicanus*
Vaux's Swift	*Chaetura vauxi*
Killdeer	*Charadrius vociferus*
Lark Sparrow	*Chondestes grammacus*
Lesser Nighthawk	*Chordeiles acutipennis*
Northern Harrier	*Circus cyaneus*
Gilded Flicker	*Colaptes chrysoides*
Rock Dove	*Columba livia*
Inca Dove	*Columbina inca*
Common Ground-dove	*Columbina passerine*
Common Raven	*Corvus corax*
Yellow-rumped Warbler	*Dendroica coronata*
Yellow Warbler	*Dendroica petechia*
Townsend's Warbler	*Dendroica townsendi*
Pacific-slope Flycatcher	*Empidonax difficilis*
Gray Flycatcher	*Empidonax wrightii*
Horned Lark	*Eremophila alpestris*

Table D-3 Bird Species Potential Occurrence in the Vicinity of the Project Site[1]	
Common Name	**Scientific Name**
Prairie Falcon	*Falco mexicanus*
American Kestrel	*Falco sparverius*
Greater Roadrunner	*Geococcyx californianus*
Blue Grosbeak	*Guiraca carulea*
Cliff Swallow	*Hirundo pyrrhonota*
Barn Swallow	*Hirundo rustica*
Bullock's Oriole	*Icterus bullockii*
Hooded Oriole	*Icterus cucullatus*
Bullock's Oriole	*Icterus galbula*
Loggerhead Shrike	*Lanius ludovicianus*
Gila Woodpecker	*Melanerpes uropygialis*
Song Sparrow	*Melospiza melodia*
Elf Owl	*Micrathene whitneyi*
Northern Mockingbird	*Mimus polyglottos*
Bronzed Cowbird	*Molothrus aeneus*
Brown-headed Cowbird	*Molothrus ater*
Ash-throated Flycatcher	*Myiarchus cinerascens*
Brown-crested Flycatcher	*Myiarchus tyrannulus*
MacGillivary's Warbler	*Oporornis tolmiei*
Western Screech Owl	*Otus kennicottii*
House Sparrow	*Passer domesticus*
Phainopepla	*Phainopepla nitens*
Common Poorwill	*Phalaenoptilus nuttallii*
Black-headed Grosbeak	*Pheucticus melanocephalus*
Ladder-backed Woodpecker	*Picoides scalaris*
Abert's Towhee	*Pipilo aberti*
Green-tailed Towhee	*Pipilo chlorurus*
Western Tanager	*Piranga ludoviciana*
Black-tailed Gnatcatcher	*Polioptila melanura*
Vermillion Flycatcher	*Pyrocephalus rubinus*
Great-tailed Grackle	*Quiscalus mexicanus*
Rock Wren	*Salpinctes obsoletus*
Black Phoebe	*Sayornis nigricans*
Say's Phoebe	*Sayornis saya*
Brewer's Sparrow	*Spizella breweri*
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*
Western Meadowlark	*Sturnella neglecta*
European Starling	*Sturnus vulgaris*
Bendire's Thrasher	*Toxostoma bendirei*

Table D-3 Bird Species Potential Occurrence in the Vicinity of the Project Site[1]	
Common Name	**Scientific Name**
Crissal Thrasher	*Toxostoma crissale*
Curve-billed Thrasher	*Toxostoma curvirostre*
Le Conte's Thrasher	*Toxostoma lecontei*
Western Kingbird	*Tyrannus verticalis*
Barn Owl	*Tyto alba*
Orange-crowned Warbler	*Vermivora celata*
Lucy's Warbler	*Vermivora luciae*
Nashville Warbler	*Vermivora ruficapilla*
Bell's Vireo	*Vireo bellii*
Warbling Vireo	*Vireo gilvus*
Wilson's Warbler	*Wilsonia pusilla*
White-winged Dove	*Zenaida asiatica*
Mourning Dove	*Zenaida macroura*
White-crowned Sparrow	*Zonotrichia leucophrys*

[1]*Corman 2008; Corman and Wise-Gervais 2005; Glinski 1998.*

Table D-4 Reptile and Amphibian Species Potential Occurrence in the Vicinity of the Project Site[1]	
Common Name	**Scientific Name**
Arizona glossy snake	*Arizona elegans noctivaga*
Sonoran desert toad	*Bufo alvarius*
Great plains toad	*Bufo cognatus*
Red-spotted toad	*Bufo punctatus*
Woodhouse's toad	*Bufo woodhousii*
Common zebra-tailed lizard	*Callisaurus draconoides*
Desert rosy boa	*Charina trivergata*
Variable sandsnake	*Chilomeniscus cinctus*
Western shovel-nosed snake	*Chionactus occipitalis*
Great Basin whiptail	*Cnemidophorus tigris tigris*
Desert banded gecko	*Coleonyx variegatus variegatus*
Western diamond-backed rattlesnake	*Crotalus atrox*
Sonoran sidewinder	*Crotalus cerastes cercobombus*
Speckled rattlesnake	*Crotalus mitchellii pyrrhus*
Black-tailed rattlesnake	*Crotalus molossus*
Mojave rattlesnake	*Crotalus scutulatus*
Great Basin collared lizard	*Crotaphytus bicinctores*
Desert iguana	*Dipsosaurus dorsalis*
Long-nosed leopard lizard	*Gambelia wislizenii*
Desert tortoise	*Gopherus agassizii*
Gila monster	*Heloderma suspectum*
Night snake	*Hypsiglena torquata*
Sonoran mud turtle	*Kinosternon sonoriense*
California kingsnake	*Lampropeltis getula*
Western blind snake	*Leptotyphlops humilis*
Red racer	*Masticophis flagellum*
Sonoran coral snake	*Micruroides euryxanthus*
Desert horned lizard	*Phrynosoma platyrhinos*
Spotted leaf-nosed snake	*Phyllorhynchus decurtatus*
Sonoran gopher snake	*Pituophis catenifer*
Bullfrog	*Rana catesbeiana*
Western long-nosed snake	*Rhinocheilus lecontei*
Western patch-nosed snake	*Salvadora hexalepis*
Common chuckwalla	*Sauromalus obesus*
Couch's spadefoot	*Scaphiopus couchii*
Desert spiny lizard	*Sceloporus magister*
Western ground snake	*Sonora semiannulata*

Table D-4 Reptile and Amphibian Species Potential Occurrence in the Vicinity of the Project Site[1]	
Common Name	**Scientific Name**
Southwestern black-headed snake	*Tantilla hobartsmithi*
Checkered garter snake	*Thamnophis marcianus*
Western lyre snake	*Trimorphodon biscutatus*
Spiny softshell	*Trionyx spiniferus*
Long-tailed brush lizard	*Urosaurus graciosus*
Ornate tree lizard	*Urosaurus ornatus*
Common side-blotched lizard	*Uta stansburiana*

[1] *Stebbins 2003.*

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Exhibit E

EXHIBIT E - SCENIC AREAS, HISTORIC SITES AND STRUCTURES, ARCHAEOLOGICAL SITES

As stated in Arizona Corporation Commission Rules of Practice and Procedure R14-3-219:

> *"Describe any existing scenic areas, historic sites and structures or archaeological sites in the vicinity of the proposed facilities and state the effects, if any, the proposed facilities will have thereon."*

VISUAL RESOURCES

Visual resources consist of the landforms, vegetation, rock and water features, and cultural modifications that create the visual character and sensitivity of a landscape. These factors also contribute to the sensitivity of the landscape to visual change. A number of factors are inventoried for the existing visual character in order to evaluate the effect the Project would have on visual resources and characteristic landscapes. The primary existing visual condition factors considered in the area around the Project Site include Visual Quality, Viewer Concern, Viewer Exposure, and Overall Visual Sensitivity. Each of these factors is defined below.

Visual Quality (VQ) is a measure of the overall impression or appeal of an area as determined by the particular landscape characteristics such as landforms, rockforms, water features, and vegetation patterns, as well as associated public values. The attributes of variety, vividness, coherence, uniqueness, harmony, and pattern contribute to visual quality classifications of indistinctive (low), common (moderate), and distinctive (high). VQ in the Project Site area is low to moderate because of the presence of the developed agricultural fields and associated structures and the relative uniformity of the near-field landscape.

Viewer Concern (VC) addresses the level of interest or concern of viewers regarding an area's visual resources and is closely associated with viewers' expectations for the area. VC reflects the importance placed on a given landscape based on the human perceptions of the intrinsic beauty of the existing landforms, rockforms, water features, vegetation patterns, and even cultural features. VC is expected to be low in this area because much of it is already developed for agriculture.

Viewer Exposure (VE) describes the degree to which viewers are exposed to views of the landscape. Viewer exposure considers landscape visibility (the ability to see the landscape), distance zones (proximity of viewers to the subject landscape), number of viewers, and the duration of view. Landscape visibility can be a function of several interconnected considerations, including proximity to viewing point, degree of discernible detail, seasonal variations (snow, fog, and haze can obscure landscapes), time of day, and presence or absence

of screening features such as landforms, vegetation, and/or built structures. Even though a landscape may have highly scenic qualities, it may be remote, receiving relatively few visitors, and therefore have a low degree of viewer exposure. Conversely, a subject landscape or project may be situated in relatively close proximity to a major road or highway utilized by a substantial number of motorists and yet still result in relatively low viewer exposure if the rate of travel speed on the roadway is high and viewing times are brief, or if the landscape is partially screened by vegetation or other features. Frequently, it is the subject area's proximity to viewers or distance zone that is of particular importance in determining viewer exposure. Landscapes are generally subdivided into three or four distance zones based on relative visibility from travel routes or observation points. Distance zones typically include foreground, middle-ground, and background. The actual number of zones and distance assigned to each zone depends on the existing terrain characteristics and public policy and is often determined on a project-by-project basis. The viewer exposure in the Project area is low because it (i) is remote, (i) has a public road on only one side of the Project Site (Palomas Road on the south end) that receives relatively little traffic, and (iii) there are very few residents in the area.

Overall Visual Sensitivity is a concluding assessment related to an existing landscape's susceptibility to an adverse visual outcome. A landscape with a high degree of visual sensitivity is able to accommodate a lower degree of adverse visual change without resulting in a significant visual impact. A landscape with a low degree of visual sensitivity is able to accommodate a higher degree of adverse visual change without resulting in a significant visual impact. Overall visual sensitivity is derived from a comparison of existing visual quality, viewer concern, and viewer exposure. Visual Sensitivity is classified as low, moderate, or high and would be low in the Project area because of the significant agricultural development in the area.

Analysis of these factors was conducted from Key Observation Points (KOPs) that are representative of the visual conditions around the Project Site as part of the CEC Application for the adjacent Agua Caliente Solar Project. The KOPs selected as locations from which the visual impact of the Agua Caliente Solar Project could be seen are the same ones from which the Project could be seen. The types and degree of visual changes that would be caused by the Agua Caliente Solar Project are shown in the CEC Application submitted for that project in computer-generated photographic simulations taken from the KOPs.

The visual impact from the Project will be similar to those shown for the Agua Caliente Solar Project. In general, the Project will have minimal incremental visual impacts when compared with the existing Palo Verde – North Gila #1 500kv transmission line and will not be readily discernable from any of the KOPs.

Effects to visual resources from the development of the Project will result in minimal changes to views from viewpoints in the immediate vicinity. The most visible components of the Project from all viewpoints would be the turning structures that will be built within the existing transmission line right-of-way where other similar structures are already located.

The proposed switchyard and associated loop-in lines that interconnect the switchyard to existing Palo Verde – North Gila #1 500kV transmission line will introduce new elements into the landscape, but will not substantially alter the existing form, line, color, and texture which characterize the existing landscape and will be similar to existing features.

CULTURAL RESOURCES

The Project Site is located on 30 acres of land that has been actively farmed for decades. As such, this location has undergone long-term and continuing disturbance associated with agricultural activities. Based on current inventories, archaeological and historical overviews, and previous surveys in the area, the proposed Project Site is expected to contain few, if any, prehistoric or historic cultural resources.

A Class I cultural resources survey was conducted where site and project files were checked at the Arizona State Museum (ASM) and the data received were examined to determine if previously recorded cultural resources were within the Whitewing Ranch and a one-mile buffer. The ASM records check revealed that four cultural resource surveys have been conducted within the buffer area, and that two of these surveys included portions of the Whitewing Ranch (the surveys for the Southern Pacific Pipeline Project and the Level 3 Fiber Optic Line Project that crosses the southern boundary of the Ranch and the Project Site). A copy of the Class I Report is included in **Appendix E-1**.

No cultural resource sites have been previously recorded within the Project Site. However, three sites have been recorded within the one-mile radius. One historic site (Wellton-Phoenix-Mesa-Eloy Spur of the Southern Pacific Railroad – presently the UPRR) is considered eligible for the National Register of Historic Places. This is the existing inactive railroad that is located just south of the Project Site.

A copy of the Class I Report was provided to the SHPO and six area tribes. These letters of submittal are included in **Appendix E-2**. Any response letters that are received from SHPO or the six tribes will be provided in a supplemental filing.

CONCLUSIONS

With the exception of the new structures in the existing Palo Verde – North Gila #1 500kV transmission line corridor, the Project would not be readily visible from nearby locations, including to travelers along Palomas Road. The Project will not be visible from distant locations, because of its remote location, its relatively low profile, the use of similar transmission structures associated with the existing Palo Verde – North Gila #1 500 kV transmission line, intervening features (UPRR along Palomas Road), topography, and vegetation.

There are no known historic sites or structures or archaeological sites that would be affected by the proposed Project. The past agricultural activities on the Project Site limit the potential for archaeological resources to be present. The nearby potentially eligible historic site (the railroad

immediately south of the Project Site) would be crossed by the transmission lines associated with the Project, but would not be directly impacted.

REFERENCES

References for the cultural resources survey are included in the Class I Cultural Resources Report.

APPENDIX E-1

CLASS 1 CUTLURAL RESOURCES REPORT

Agua Caliente Solar, LLC

Class I Cultural Resource Report for the Proposed Agua Caliente Solar Project and the associated APS Q43 Substation Project, Yuma County, Arizona

May 7, 2009

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SHPO Standardized Report Abstract

AGENCY: Arizona State Land Department

REPORT TITLE: Class I Cultural Resource Report for the Proposed Agua Caliente Solar Project, Yuma County, Arizona

DATE OF REPORT: May 7, 2009

PROJECT DESCRIPTION: Class I report of previously recorded cultural resources within the proposed Agua Caliente Solar Project and the associated APS Q43 Substation Project, Yuma County, Arizona.

LOCATION: Township 4 and 5 South, Range 12 West, Sections 3, 4, 5, 6, 7, 8, 9, 10, 11, 14, 15, 16, 17, 20, 21, 22, 23, 26, 27, 28, 29, 31, 32, 33, 34, and 35 of the Palomas Mountains SE, Baragan Mountain, Horn, Aztec NW, Arizona USGS 7.5' topographic quadrangles, Yuma County, Arizona.

NUMER OF ACRES REVIEWED: approximately 15,000

METHODOLOGY: The previously recorded cultural resources and investigations in the Project Area (defined below), including a one mile-wide buffer, were examined using data received from the Arizona State Museum site file check to determine if known cultural resources would be potentially impacted by the proposed Project. Information from the Bureau of Land Management General Land Office, National Register of Historic Places, Arizona Historic Site List, and historic trails listings from National Parks Service, BLM, and Arizona State Parks were also reviewed.

NUMBER OF SITES: 3 (2 outside Project Area)

ELIGIBLE: 1 (inside Project Area)

SITES OF UNKNOWN ELIGIBILITY: 0

NOT ELIGIBILE SITES: 2 (outside Project Area)

COMMENTS: The literature search and records review of the Project Area conducted by kp environmental identified no sites previously recorded within the Project Area. One eligible site (the Wellton-Phoenix-Eloy Spur of the Southern Pacific Railroad also known as the Sunset Route); is located within the Project Area.

1.0 Introduction

Agua Caliente Solar, LLC requested that kp environmental, LLC complete a Class I cultural resource literature search and records review for the proposed Agua Caliente Solar Project and the associated APS Q43 Substation Project.

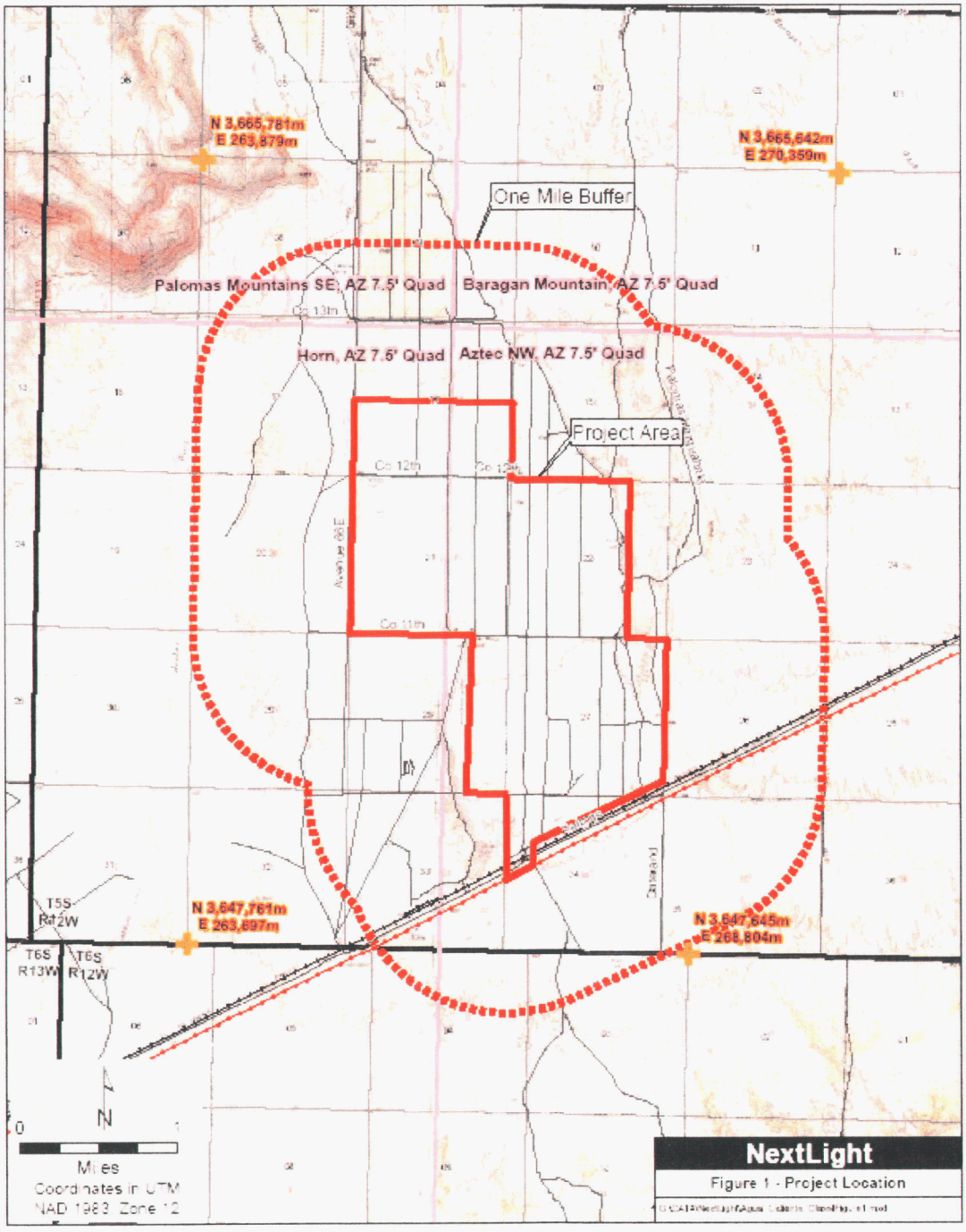
The Agua Caliente Solar Project is a solar generating facility that will utilize either photovoltaic (PV) technology or concentrating solar thermal power (CSP) with proven parabolic trough technology. If the Agua Caliente Solar Project (Project) is developed using PV technology, the Project will utilize crystalline silicon, or possibly thin film, PV technology on single-axis trackers, or fixed tilt supports. The Project is located in Yuma County approximately 10 miles north of Dateland, Arizona about 45 miles west of Gila Bend, Arizona and 65 miles east of Yuma, Arizona. The Project will be located on a portion of a 3,800 acre private agricultural property referred to as the "Whitewing Ranch" (Property) located along Palomas Road (also referred to as Palomas/Hyder Road). The Project Site will occupy approximately 2,400 acres of the Property. The remaining acres of the Property will be leased to Del Monte for continued agricultural use.

The APS Q43 Substation Project is a new 500 kV Switchyard, 500kV/69kV Substation and other transmission facilities that will provide an interconnection with the existing Hassayampa - North Gila 500kV transmission line located just south of the Property boundary. The Substation will be located on approximately 30 acres in the southwest corner of the Property. The existing Hassayampa – North Gila 500kV transmission line will be looped into the Substation. To facilitate the Hassayampa – North Gila tie to the Substation, each line termination will have a new turning structure located within the existing transmission line right-of-way. From each of the turning structures there will be a single 500kV span of approximately 800 feet (Tie Lines) into a dead-end structure located within the Substation.

The combined area impacted by the Agua Caliente Solar Project and the APS Q43 Substation Project has been defined as the Project Area.

2.0 Project Area

The Project Area is located in Sections 4, 5, 9, 15, 16, 21, 22, 27, 28, and 34 of Township 5 South, Range 12 West (Gila and Salt River Baseline and Meridian) of the Horn and Aztec NW, Arizona USGS 7.5' topographic quadrangles, in Yuma County, Arizona. The literature search and records review included a 1-mile buffer so additional sections, Township, and USGS 7.5' topographic quadrangles were included. These included Sections 3, 6, 7, 8, 10, 14, 17, 20, 23, 26, 29, 31, 32, 33, and 35; Township 4 South; and Palomas Mountains SE and Baragan Mountain USGS 7.5' topographic quadrangles. The Project Area is just northeast of the community of Dateland, Arizona and north of Palomas Road and the Southern Pacific Railroad right-of-way (Figure 1).


N 3,665,781m
E 263,879m
N 3,665,642m
E 270,359m
One Mile Buffer
Palomas Mountains SE, AZ 7.5' Quad
Baragan Mountain, AZ 7.5' Quad
Horn, AZ 7.5' Quad
Aztec NW, AZ 7.5' Quad
Project Area
Co 13th
Co 12th
Co 11th
N 3,647,761m
E 263,697m
N 3,647,645m
E 268,804m
T5S
R12W
T6S
R13W
T6S
R12W
0
1
N
Miles
Coordinates in UTM
NAD 1983 Zone 12
NextLight
Figure 1 - Project Location

3.0 Methods

The previously recorded cultural resources and investigations in the Project Area, including a one mile-wide buffer, were examined using data received from the Arizona State Museum (ASM) site file check to determine if known cultural resources would be potentially impacted by the proposed Project. Information from Bureau of Land Management (BLM) General Land Office (GLO), National Register of Historic Places (NRHP), Arizona Historic Site List, and historic trails listings from National Parks Service (NPS), BLM, and Arizona State Parks were also reviewed.

4.0 Cultural-Historical Setting

The following description of the cultural history of the Project Area is summarized in large part from the following sources: Bilsbarrow and Palus (1997); City of Casa Grande (2006); Clemensen (1992); Craig and Hackbarth (1997); Deaver and Altschul (1994); Gilpin and Phillips (1998); Haynes (1986); Janus (1989); Marmaduke (1993); Myrick (1980); Russell (1975); Spier (1970); Whittlesey et al. (1994); Wright (2002); Wright et al. (2002). The following discussion is divided into prehistoric and historic periods. The prehistoric periods include the Paleoindian, Archaic, and Hohokam, and the historic periods include the Protohistoric and Historic.

Prehistoric

Paleoindian

The earliest known record of human habitation in Arizona's desert regions dates to approximately 12,000 years (Haury 1950). These Paleoindian hunters-gatherers were highly mobile, and surface cultural remains associated with their habitation and subsistence sites are rare, as Paleoindian cultural materials are often buried deep beneath Holocene sedimentary deposits.

The Paleoindian period, approximately 10,000 to 7500 B.C., is characterized by small, nomadic bands that followed megafauna and gathered wild plants. Sites from this period have been documented in southern Arizona (Cordell 1984; Haury 1950; Haynes 1986; Huckell 1984). However, sediments from this period are generally not exposed in the Casa Grande area. No Paleoindian sites have be reported near the Project Area.

The subsistence practices of early hunter-gatherers changed approximately 10,000 to 8000 B.C. with the extinction of large game, as well as with the environmental changes associated with the Pleistocene/Holocene climatic transition (Guthrie 2006; Martin 1967). The overall lifestyle of the early hunter-gatherers continued into the Archaic period (ca. 8000 to 200 B.C.), but increased aridity during the early- to mid-Holocene brought about a change in the occurrence of plant species in the Southwest (Van Devender et al. 1987). Many of these drought-tolerant plants, such as mesquite, paloverde, and screwbean pods; saguaro and other cactus fruits; and agave, were

exploited by prehistoric peoples. These plants provided a protein-rich food source that supplemented the Archaic diet of small game.

Archaic

The Early Archaic period, approximately 7500 to 5000 B.C., is characterized by a hunting and gathering lifestyle, similar to the preceding Paleoindian period. A major difference however was a climatic drying and warming trend leading to desert conditions, and the disappearance of Pleistocene big game, through natural or human agents. Hunting focused on modern game animals and gathering focused on seasonally available resources, with Archaic groups maintaining a significant degree of residential mobility. As the Archaic period progressed (Middle Archaic, ca. 5000 to 2000 B.C.), some populations began to experiment with encouraged plants. Various wild plant resources were encouraged through selective planting or reseeding, weeding of competitor species, and supplemental watering. Seasonal rounds were generally maintained, with encouraged plant stands being revisited during harvest time. Tools identified during the Archaic period such as metates, manos, and mortars demonstrate a significant focus on processing wild plant foods. Small seasonally occupied villages were present, but larger more permanent villages did not develop until the Late Archaic period.

The Late Archaic, approximately 2000 B.C. to A.D. 1, is a period of increasing sedentism although group mobility was still maintained to varying degrees. Encouraged plants began to give way to small-scale horticulture, especially with the introduction of domestic cultigens. Maintaining small fields and crops meant increased sedentism, and Late Archaic populations along floodplains and alluvial fans began to assemble into permanent villages. Sites of this type are known from the Tucson area, the Project Area, and the Phoenix area. Experimentation with domestic cultigens from Mexico appeared first in the Tucson area (corn circa. 1700 to 1200 B.C.), which is located closer to the source area for these cultigens. Late Archaic villages are deeply buried under alluvium because of their location on floodplains and alluvial fans.

Hohokam

A summary of Hohokam chronology is presented in Table 1. A brief discussion of each period in its chronological sequence is presented below. The Pioneer, Colonial, and Sedentary periods are collectively referred to as Preclassic.

Pioneer Period

The first period of Hohokam development involves a transition in local populations, as opposed to the influx of peoples from Mesoamerica as had been previously believed. During the transition from the Late Archaic to the Pioneer period, populations slowly began to shift their subsistence strategy to focus on a more sedentary, agriculture-dependent way of life. Hunting and gathering available wild foods remained important,

but the Hohokam developed a complex water control system that made irrigation agriculture possible. Ceramics first appeared during this period as plainware utilitarian items, and expanded to include many types of decorated wares including: redwares, red-on-gray, and red-on-buff. The Snaketown phase, at the end of the Pioneer period, saw several changes which indicated a growing population, increased trade contacts, and growing complexity: more diverse ceramic vessel forms and designs; expansion of irrigation systems; the presence of ceramic figurines, slate palettes, carved stone bowls, and other ritual and ceremonial items; presence of shell from the Gulf of California; and trade goods from Mesoamerica and the Mogollon rim area.

Table 1
Hohokam Chronology (Dean 1991)

Period	Phase	Approximate Time Span (A.D. years)
Pioneer	Red Mountain	0-300
	Vahki	300-500
	Estrella	500s
	Sweetwater	600s
	Snaketown	700s
Colonial	Gila Butte	775 to 850/900
	Santa Cruz	850-900 to 950/1000
Sedentary	Sacaton	950/975 to 1100/1150
		1100 to 1200
Classic	Soho	1150/1200 to 1300
	Civano	1300 to 1450/1500

Colonial Period

During this period, the number, size, type, and complexity of Hohokam sites in the area increased. Pithouses within villages tended to cluster in courtyard groups, probably occupied by extended families, which opened onto communal plaza areas. Numerous large villages contained ballcourts, which are posited to be related to the Mesoamerican game. These ballcourts probably served as a focus for community integration, where peoples from smaller surrounding hamlets would come to trade, renew kinship ties, and take part in various community activities. Smaller villages and subsistence-related sites were increasingly established during this period. Exotic trade items such as macaws and copper bells from Mesoamerica often overshadow continuing trade with Mogollon Rim and Colorado Plateau populations. By the end of

the Colonial period, Hohokam sites were established throughout central and southern Arizona in a variety of environmental settings.

Sedentary Period

Throughout this period, patterns established during the preceding Colonial period were intensified. Economic complexity increased with certain villages specializing in particular crafts. In addition, a possible hierarchical distinction between sites, especially those along shared canal systems, is indicated. Platform mounds began to be constructed during this period, and appear to have served as a type of public architecture possibly associated with hierarchical divisions within villages, with ceremonial activities, or both. As the ballcourt slowly began to go out of use, the focus of community activities began to switch to the platform mound. There are few changes to Hohokam material culture during this time with the exception of the beginnings of platform mounds, adobe/jacal surface structures, and redware.

Classic Period

Most familiar Hohokam traits disappeared or underwent radical changes during this period. Many large villages were abandoned, although, several grew as outlying populations and groups in smaller settlements aggregated with existing communities (or formed new communities) along major watercourses. Pithouses disappeared almost completely and were replaced by surface structures of adobe and masonry, which were often organized into roomblocks, then compounds with the addition of enclosing walls. Platform mounds effectively replaced ballcourts as the focus of community activities. Red-on-buff pottery was replaced by red and polychrome wares. Treatment of the dead changed: inhumation became common while cremation declined. Trade patterns shifted from a Mesoamerican focus to a more northern and eastern focus. As the trade patterns shifted to the north and east, architectural and material culture traits of the Classic period Hohokam were being derived from contact with populations in that region of eastern Arizona and western New Mexico—the Salado culture. The reorganization of Classic period Hohokam architectural and material culture styles into styles that more closely resembled the Salado indicated increased regional interaction between the two groups. In the past it was believed to represent an invasion by Salado peoples, but this is no longer thought to be the case.

There may also be a late/post-Classic Hohokam occupation known as the Polvoron phase. The existence of the phase is still a matter of debate, as well as how it fits into the generally accepted Hohokam chronology. It may extend Hohokam culture into the 16th century, or it may merely represent the end of the Hohokam sequence around A.D. 1450 to 1500. This phase is defined in the archaeological record by the reoccupation of late Classic structures, a return to pithouses, and the end of inhumation burial.

Protohistoric

The Protohistoric period dates from approximately 1450/1500, the end of the Hohokam sequence, to the establishment of the Tubac presidio by the Spanish in 1753. The Protohistoric period saw reoccupation of several prehistoric sites by the Maricopa, Kohatk, or Pima, as well as the development of new settlements. In addition, ethnohistoric accounts (Harwell and Kelly 1983:72) place the Maricopa westernmost point of earlier territorial claims as the Mohawk Mountains, which would include the Project Area.

The Jesuit missionary, Father Eusebio Francisco Kino was the first Spanish explorer to provide written accounts of the Gila River area. He was assigned to missionize in the Pimeria Alta (Land of Upper Pimas), a region that today includes northern Mexico and southern Arizona. During Kino's travels, he established many visitas and a few missions from the modern international border to the Gila River region. In addition, his explorations served as an important first step toward an overland route between Sonora, the Pima villages of the Gila River, and settlements along the California coast. Kino visited villages along the Gila River at least six times between 1691 and 1702. During his journeys, Kino mapped and described Pima villages and his interactions with various groups. Kino does not describe irrigation agriculture, so it is suspected that local populations subsisted by floodwater agriculture, hunting, and gathering. By 1744 however, the Pima were growing wheat with irrigation agriculture, and by 1775 irrigated wheat was a major crop in most Pima villages. Throughout the 1700s, the Spanish continued to expand the mission system in southern Arizona and continued to introduce non-native crops, animals, trade goods, religion, and culture.

Historic

The Historic period in Arizona dates roughly from 1753 to 1954. The 1753 date was chosen as it represents the founding of the first permanent Spanish settlement in Arizona. Dates of Protohistoric and Historic periods can differ across Arizona, usually based on dates of contact with Europeans and dates of permanent settlement by Europeans. For the purposes of this study, the aforementioned dates will be used.

According to the National Parks Service, the year 1775 marks the year Juan Bautista de Anza (Anza) successfully opened an overland route of emigration and supply from Sonora to the missions and settlements of Alta California. The 198 soldiers and families that Anza escorted brought with them on their 1,200 mile trek their language, traditions, and diverse New World Hispanic culture. The backgrounds of all soldiers and settlers were carefully recorded as español, mulato, or mestizo. Almost all the expedition members were born on this continent and had mixed European, African or Indian parentage. These influences changed the lives of the indigenous peoples and shaped the development of Arizona and California. The route Anza opened supplied the settlements of Alta California long enough for them to become established. In 1781, the Yumas revolted against Spanish rule and closed the route during the rest of the

colonial period. In later years, Anza's trail served the military, settlers, cattlemen, forty-niners and other desert travelers.

The Mexican War of Independence did not have a direct affect on the area, as most of the battles took place far south of southern Arizona. However, the Spanish did have to withdraw their troops to central Mexico, which left a vacuum that the Apache exploited. During the 1820s, Apache raiders were estimated to have killed approximately 5,000 people in Sonora and southern Arizona. Mexico was victorious in the war, and declared independence in 1821. The new Mexican government abolished the mission system. In Arizona, settlements and occupation contracted to Tucson and Tubac. In response to increased Apache raiding, Piman settlement also contracted south and west. During the Mexican (1821 to 1853) and subsequent American occupations, Pima wheat production increased dramatically, as a result the Pima sold excess crop to settlers and travelers using the Gila Trail. Arizona north of the Gila River became part of the United States in 1848, although the American phase did not officially begin until 1853, when this area was sold to the United States by Mexico as part of the Gadsden Purchase. American fur trappers and traders began working the Gila River in 1825 (the American phase dates from 1853 to present). During the Mexican-American War, American military forces passed through southern Arizona on their way to California, commonly using routes centered on the Santa Cruz and Gila rivers. These routes were well blazed by the Army, and increased use occurred after the end of the war. One specific route, the Gila Trail, was by this time a widely used mail, freight, and emigrant route. At the close of the American Civil War, settlement in the Gila River valley increased dramatically. This was due in part to the American Army's attempts to pacify the Apache. Arizona was first included as part of the Territory of New Mexico, and then the Territory of Arizona, and officially received American statehood in 1912.

After the Civil War, Americans began to settle permanently along the Gila River because of the availability of good agricultural lands. Agricultural activities by American settlers along the Middle Gila and further upstream caused an insufficient supply of water for Pima farmers. By 1872, the water reaching Pima crops was so limited that some Pimas relocated to the Salt River valley. However, this is not the only reason the Pima moved. Commercial pursuits in the growing Phoenix-Mesa-Lehi area, land and water availability, and the Anglo desire for a buffer between themselves and the raiding activities of the Apache also served as agents to pull Pimas from the Gila River valley to the Salt River valley. Settlers came not only from the east to settle within Arizona's agricultural lands, and rich mining districts, but also from Utah. Mormon settlers established towns in northern and eastern Arizona, and into northern Mexico. Some of the largest areas of Mormon settlement are the modern Mesa and Safford areas, although significant settlement also took place along the Little Colorado and San Pedro Rivers. From 1880 to 1900, the population of southern Arizona doubled, and by the turn of the century, Arizona had a population of 100,000. Many communities were established. The major town centers within the AOS are discussed below. Arizona went on to become a major producer of cotton and copper, although these industries have had their ups and downs. Agriculture tends to remain as the major economic focus within the AOS. The 20th century saw the transformation of significant portions of

Arizona into military installations. Prisoner of war camps where established in proximity to the communities of Florence and Queen Creek and along the Gila River between 1942 and 1945 (Iritani 1994).

Southern Pacific Railroad

Mainline

After the close of the Civil War, a southern railroad route along the now defunct Butterfield Stage Route was being explored as an option to move goods and people across the country in a timely fashion. The Southern Pacific Railroad Company (SPRR) was to lay track from San Francisco to Yuma, while the Texas and Pacific Railroad Company (TPRR) was to lay track westward across Texas, New Mexico, and Arizona to meet with the SPRR at Yuma. As the SPRR reached the Arizona border, the TPRR was stalled in the vicinity of Fort Worth, Texas, nowhere near the interconnection point at Yuma. Having no authority to continue into Arizona, the SPRR courted the U.S. Congress, but failed to receive approval. The SPRR then turned to the territorial legislatures of Arizona and New Mexico, and received approval to continue laying track eastward.

The first train arrived in Maricopa Station, modern Heaton, on April 29, 1879. Maricopa Station quickly became a boomtown, as it was the closest point to retain alternative transportation to reach Phoenix. Maricopa Station soon had a large office building, a warehouse, and a hotel. As with most railroad boomtowns, the town soon succumbed to the ups-and-downs of railroad economy, and a new junction for the transfer of goods to Phoenix was located eastward. The SPRR continued to push eastward and reached Casa Grande on May 19, 1879. Casa Grande served as the end of the line for several months, and came to be known as Terminus. In January 1880, construction continued eastward. As 1881 drew to a close, the SPRR track through Arizona connected to the nationwide system of rail lines. The economy and settlement of southern Arizona quickly changed as it was now reliably connected to the rest of the country. The SPRR was taken over by the UPRR in 1997 (Union Pacific Railroad 2006).

Wellton-Phoenix-Mesa-Eloy

This segment of the transcontinental Sunset Route of the SPRR was constructed in 1926. It spurs off of the mainline in Wellton and travels through Phoenix, Tempe, Mesa, Gilbert, and Coolidge before rejoining the mainline at Eloy. This spur was constructed using over a thousand men and 600 mules to provide mainline access to Phoenix, which had developed into Arizona's most important city by the mid-1920s. The single-track rail line was updated with modern track, computers, and electronic signaling (Janus 1989) but has not been used for at least the past five years.

5.0 Previous Research

Site and project files were checked at the ASM and the data received were examined to determine if previously recorded cultural resources were within the Project Area and buffer. Three sites have been recorded within a one-mile radius of the Project Area. One historic site (Wellton-Phoenix-Mesa-Eloy Spur of the Southern Pacific Railroad) considered eligible, was present within the Project Area (Figure 2).

The ASM records check revealed that four projects have been conducted within the one mile-wide buffer of the Project Area. Three of the projects are linear projects that cross the southernmost boundary of the Project Area (Figure 2, Table 2). The fourth project (1955-2.ASM) was conducted approximately 1/3 mile southeast of the southeastern corner of the Project Area.

David A. Breternitz conducted a brief archaeological survey of the lower Gila River in the summer of 1955 using private funding (1955-2.ASM). This was apparently private research and the result of the survey was published in KIVA (Breternitz 1957). The survey followed the Gila River from Yuma to the Painted Rock Mountains and included the discovery and recording of 14 prehistoric Native American and 19th century U.S. settler sites in the Lower Gila River region. All materials were recovered from the surface and the sites range from trails to campsites to petroglyph sites. Ceramics were the most abundant material (various series of Lower Colorado Buff ware). Breternitz's survey was located within the southern corner of the 1-mile buffer of the Project Area, and one site (AZ Y:3:5) was recorded and collected within the southern corner of the 1-mile buffer (Figure 2).

The Southern Pacific Pipeline Survey (SPPS) Project (1955-3.ASM) crosses the southern boundary of the Project Area (Figure 2). None of the 15 sites they recorded for the SSP project was located within the Project Area.

The Yuma 500 kV Transmission Line Project (1981-162.ASM) was located within the Project Area (Figure 2). None of the 33 sites they recorded for the Yuma project was located within the Agua Caliente Solar Project Area.

The Parsons Brinckerhoff Network Services (PBNS) Project (1999-587.ASM) crosses the southern boundary of the Project Area (Figure 2). None of the 14 sites they recorded for the PBNS project was located within the Project Area.

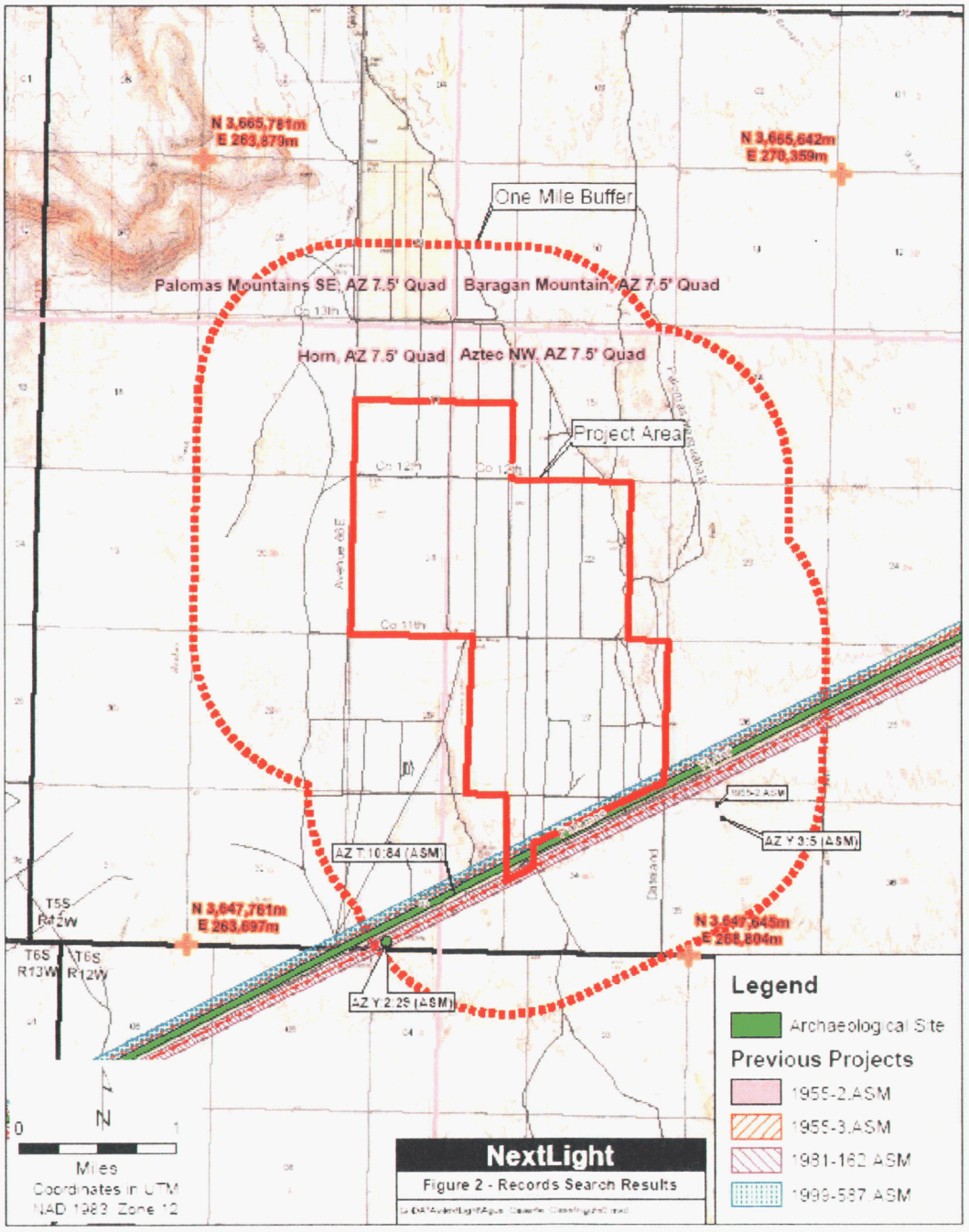

N 3,665,781m
E 263,879m
N 3,665,642m
E 270,359m
One Mile Buffer
Palomas Mountains SE, AZ 7.5' Quad
Baragan Mountain, AZ 7.5' Quad
Horn, AZ 7.5' Quad
Aztec NW, AZ 7.5' Quad
Project Area
AZ T:10:84 (ASM)
AZ Y:3:5 (ASM)
AZ Y:2:29 (ASM)
N 3,647,761m
E 263,697m
N 3,647,645m
E 268,804m
T5S R4W
T6S R13W
T6S R12W
Legend
Archaeological Site
Previous Projects
1955-2.ASM
1955-3.ASM
1981-162 ASM
1999-587 ASM
0
1
Miles
Coordinates in UTM
NAD 1983 Zone 12
NextLight
Figure 2 - Records Search Results

Table 2. Summary of Previous Archaeological Research

Location	Agency No. / Project Description	Sites	Reference	Project Area
AZ Y:3	1955-2.ASM / Brief Archaeological Survey of the Lower Gila River	14	Breternitz 1957	Within 1 mile buffer area
AZ Y:2 AZ Y:3	1955-3.ASM / Southern Pacific Pipeline Survey Project	15	Komerska and Breternitz 1955	Within Project Area
AZ Y:2 AZ Y:3	1981-162.ASM / Yuma 500 kV Transmission Line Project	33	Effland and Green 1982	Within Project Area
AZ Y:2 AZ Y:3	1999-587.ASM / PBNS Level 3 Fiber Optic Line Project	13	Doak 1999, 2001	Within project Area

Only one site, the historic Southern Pacific Railroad (AZ T:10:84), has been considered eligible for the National Register and is located within the Project Area (Figure 2).

The remaining sites are also outside of the Project Area and are not considered eligible for the National Register. These include sites AZ Y:3:5 and AZ Y:2:29 (Figure 2). Site AZ Y:3:5 was recorded by Breternitz (1957) as a possible campsite on a trail between Gila and the mountains to the north. The site was recorded as a surface deposit and collected; therefore, surface manifestation of the site no longer exists.

Site AZ Y:2:29 was recorded by Effland and Green (1982) as the Horn Railroad Station building complex and debris. This station is associated with the Southern Pacific Railroad and is an Anglo-historic post-1926 construction; however, it is recorded as destroyed. The site dimension is 3500 m^2 and is comprised of historic brick, concrete, and metal construction material. The destruction of the standing structures of the complex has compromised the integrity of the complex; therefore, it would not be considered eligible for the National Register based on the debris alone.

Review of the National Register of Historic Places website found that one listed National Register site, the Camp Horn Monument (#3000900), is present in the vicinity of the Project Area; however, this historic resource is approximately 5 miles west of the Project Area and it is not anticipated that any impacts from the Agua Caliente Solar Project will occur to this National Register listed site.

Review of the historic trails listings from National Parks Service website also found that a portion of the Anza Trail corridor is present within the vicinity of the Project Area; however, it is also outside of the Project Area and the 1-mile buffer. It is not anticipated

that any impacts from the Agua Caliente Solar Project will occur to this trail corridor or any associated campsites that may be present because the Project Area is well to the north of the documented trail corridor.

5.1 National Register of Historic Places Evaluation

To be eligible for listing in the National Register, a cultural resource must meet one of the four criteria defined by Title 36, Part 60, of the Code of Federal Regulations (36 CFR 60), which reads as follows:

The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and

> (a) that are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> (b) that are associated with the lives of persons significant in our past; or
>
> (c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
>
> (d) that has yielded, or may be likely to yield, information important in prehistory or history.

In addition to these four criteria, there is a general stipulation that the property be 50 years old or older (for exceptions, see 36 CFR 60.4, Criteria Considerations). The importance of information that a property may yield is measured by its relevance to identified research questions that can be addressed through the analysis of particular property types. In addition to research potential, the cultural resources of Native Americans, Euroamericans, and other ethnic communities may possess public and ethnic value. Finally, cultural resources may also have broader public significance, such as serving to educate the public about important aspects of national, state, and local history and prehistory.

The first step in determining the significance of cultural resources is to define appropriate historic contexts. A historic context is a body of information about patterns or trends in history organized by three basic elements: theme, place, and time (NPS 1997). In essence, a historic context is a historically meaningful segment of the history or prehistory of a particular geographic area. Together, all of the various possible historic contexts for an area would form a comprehensive summary of all aspects of the area's history and prehistory.

A theme is the equivalent of a research problem, and a historic context is developed by placing the problem in an appropriate setting in both time and space. The context is linked to tangible cultural resources by the concept of a property type.

The historic contexts are presented below and follow the same structure. A short discussion of current research issues is followed by a set of research questions in each of the following sections. A discussion of data requirements, including a listing of pertinent property types, closes each context.

5.2 Research Questions

Chronology

Chronology is a key component in understanding the processes of cultural change in the Arizona desert regions. Sites located in southwestern Arizona and also known as Papagueria are primarily scattered ruins, once thought to be so numerous that there was often not much to the stratigraphic depth (Haury 1950).

Prehistoric residential sites do, however, contain the remains of houses, pit features, and other subsurface cultural deposits. Chronology in this area is a major research issue for Gila River drainage system. Short of reliable absolute dates from well-understood contexts, archaeologists in Gila River valley in the past have been forced to rely heavily on artifact cross dating, the origin of which was with black-on-white sherds from the Western Anasazi area (Gumerman and Haury 1979:76). It is no surprise, therefore, that our knowledge of the chronology of cultures in the region continues to change and that our comprehension of regional cultural processes remains a work in progress. Key research questions are presented below.

Research Questions

- Can the sites yield information relating to established regional lithic and ceramic typologies?
- Can the Hohokam ceramic chronology be further refined?
- Are there variations in the temporal framework in Hohokam manifestations in relationship to the distance from the core Hohokam area?

Data Requirements

In most areas of the Southwest, addressing issues of chronology requires samples suitable for absolute-dating analysis. Sample materials include botanical and faunal remains for radiocarbon dating, burned clay associated with cultural features for archaeomagnetic dating, and wood samples from specific species for tree-ring dating. Other, less-precise absolute-dating methods include thermoluminescence and obsidian

hydration analyses. Sites that can provide the kind of samples described above in interpretable contexts are extremely rare in the archaeological record of the Gila River area.

Subsistence

The Sonoran Desert area of southern Arizona is in a region of alternating mountains and plains, with major streams that were the lifelines of the Hohokam people (Gumerman and Haury 1979:75). They provided water for irrigation canals, and the mountains provided ecozones for natural food sources not found on the river plains.

Paleoindian and Archaic foraging strategies changed to hunting and gathering cultures bound to floodplain resources, and progressed to floodplain-based, logistically organized horticultural societies that continued to exploit wild riparian and desert resources. For the horticulturalists, using wild resources minimized risk imposed by an agricultural adaptation. The degree of organizational complexity needed to be responsive to a variety of environmental factors. As a result, household size, composition, and organization; the size of local population aggregates; the mix of resources used (cultigens or wild plants, riverine or desert resources) varied based on the distribution and availability of resources.

Research Questions

- What mix of resources did the Archaic people and the Hohokam use?
- If the resource mix changed through time, do these changes correlate with increasing population density, environmental fluctuations, or both?
- Are ethnographic models representative of prehistoric and/or protohistoric periods?

Data Requirements

Data required to answer these questions consist of faunal and floral remains from use contexts in Archaic, Hohokam period, and protohistoric residential sites. Macrofloral and palynological samples from sealed cultural contexts (features) and from an array of plant and animal food-processing equipment are important components in defining the resource mix, and immunoassay residue analysis on lithic tools recovered from cultural contexts could potentially provide information on patterns of animal exploitation. As with chronological needs, contexts that can provide these data are rare.

Land-Use Patterns

Land-use patterns form an important part of a culture's adaptation to its surrounding environment, and its strategy characterizes and describes the ways in which a culture

interacts with and exploits its natural resources. The organization of land-use strategies is patterned and is reflected in the set of functional site types embedded in the land-use system.

Analysis of land-use systems provides considerable insights into interactions between economic adaptations and changing environmental and social circumstances, and like subsistence systems, they operate in an ecological context and are, therefore, responsive to fluctuations in environmental conditions. Essentially land-use systems influence, and are influenced by a myriad of extant social conditions, such as organizational complexity, labor organization and scheduling, ritual and ceremonial activities, and interrelations with neighboring communities, among other factors.

Research Questions

- Did Hohokam site locations co-vary with environmental factors? If so, what factors appear to have been the most significant?
- How do site location and site type relate to the spatial distribution of raw-material sources in the region?
- Did site complexity influence the direction of trade relations with the Southern tribes versus the Northern and Eastern tribes?

Data Requirements

By obtaining information about residential, subsistence, and functional site-type patterning, we can reconstruct land-use strategies. Using subsistence, spatial, and chronological information obtained from residential sites, nonresidential site types, and land-use systems, the entire system can be defined. Elements comprising land-use systems (including issues of economy and seasonality) must be discerned from subsistence-related data recovered from each class of sites.

Contact and Interaction between Native Americans and Europeans and Euroamericans

Historical-period accounts of the primary Native American group in the Project Area, the Pima, exist from the mid eighteenth and mid-nineteenth centuries. The first written account of Pima lifeways was first recorded by the Spanish Fr. Kino in the mid eighteenth century. Archaeological information to support or augment ethnohistoric data is largely lacking. Important questions about protohistoric and historical-period Pima subsistence and settlement systems remain.

Research Questions

- To what degree were protohistoric and historical-period Pima integrated into the local Euroamerican economy?
- To what degree, if at all, did this Native American group rely on wild botanical and faunal resources during the mid eighteenth and early nineteenth centuries?
- Are ethnohistoric data representative of Pima subsistence and land use patterns? What resource mix did they rely on during the early historical period?
- How well, if at all, were European-introduced domesticated plants and animals incorporated into the Pima resource mix?

Data Requirements

Data required to answer these questions can best be obtained from one or more eighteenth to nineteenth century Pima residential sites. If the sites have stratigraphic depth, they may include structures and sealed features that contain data that inform on subsistence, economic, social, and ritual aspects of past lifeways.

Historical-Period Occupation

The eighteenth and nineteenth century occupation of southern Arizona had a significant impact on the lives of the Native American people of the area. While changes were already underway in the Project Area when the Europeans first encountered the area, more drastic changes followed. The phases of the Hohokam period saw an intensification, peak, and decline in agricultural activities. During the protohistoric and historic periods the Native Americans returned to a more intensive agricultural practice with the addition of non-native crops, animals, trade goods, religion, and culture.

Research Questions

- How did the establishment of missions and presidios, as well as the introduction of new crops and livestock, affect settlement pattern, subsistence strategies and cultural traditions?
- Can the study of historic archaeological sites, in conjunction with archival research, tell about the lives of the Spanish, Mexican, and Euroamerican soldiers and settlers in the Pima area?

- How did the coming of the railroad affect patterns of settlement and rural economies? How did sidings, camps, spurs and other associated sites function in relation to the railroads and surrounding sites?

Data Requirements

While few historic resources have been previously recorded in the Project Area, there is great potential for further research into the lives of migrants into the area. Excavation of historic archaeological sites, as well as ethnohistoric data and sources can reveal a wealth of information that may provide insight into the social fabric of the lives of the migrants into the area and the effects of those cultures on the Native culture.

6.0 Management Recommendations

The kp environmental intensive Class I cultural inventory of approximately 15,000 acres within the proposed Project Area identified one site considered eligible for the National Register namely the Wellton-Phoenix-Mesa-Eloy Spur of the Southern Pacific Railroad. However, the site will not be impacted by the development of the Agua Caliente Solar Project or the APS Q43 Substation Project given that (i) the rail is no longer in operation, (ii) the number of access roads to the Property will not materially change from present circumstances, and (iii) the transmission tie lines between the Hassayampa – North Gila 500kV transmission line and the Substation will be over head lines and will not impact the historic site. The construction and operation of the projects will not have any negative physical impact on the rail line.

The Project Area has not been subjected to intensive field investigations, therefore it is recommended that a sample or Class II field survey plan be developed and implemented for the Project Area to ensure that if unrecorded historical and archaeological resources exist they are identified in the Project Area prior to construction. This sample survey plan would take into account variables including, but not limited to, previously recorded sites/previous research; historic and prehistoric settlement analysis; trade patterns/routes; topography; hydrology; and biological and geological resources to determine within the overall Project Area, the areas with the greatest likelihood of encountering cultural resources.

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APPENDIX E-2

CUTLURAL CORRESPONDENCE

kp environmental

kp environmental, LLC
2387 Montgomery Ave.
Cardiff By The Sea
California 92007
Tel 619.241.3330

Mr. James Garrison
State Historic Preservation Officer
Arizona State Historic Preservation Office
1300 West Washington
Phoenix, AZ 85007

RE: Class I Cultural Resources Report for the Proposed Agua Caliente Solar Project.

Dear Mr. Garrison:

Date:
May 8, 2009

Contact:
Trish Mitchell

Phone:
619.241.3330

Email:
tmitchell@kpenvironmental.com

Agua Caliente Solar, LLC proposes to construct a new solar generating facility that will utilize either photovoltaic (PV) technology or concentrating solar thermal power (CSP) with proven parabolic trough technology. If the Agua Caliente Solar Project (Project) is developed using PV technology, the Project will utilize crystalline silicon, or possibly thin film, PV technology on single-axis trackers, or fixed tilt supports. The Project is located in Yuma County approximately 10 miles north of Dateland, Arizona about 45 miles west of Gila Bend, Arizona and 65 miles east of Yuma, Arizona. There is an associated switchyard/substation project named the APS Q43 Substation Project that will be located on the same property with the Agua Caliente Solar Project. I have enclosed a copy of the Class I Cultural Resources Report document prepared by kp environmental with a study area that supports both projects for your review and comment.

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kp environmental

Nation, the Gila River Indian community, the Hopi Tribe, the Salt River Pima-Maricopa Indian Community, and the Tohono O'odham Nation.

Agua Caliente Solar and kp environmental greatly appreciate your comments and will address any issues and concerns that you may have. Please provide your comments in 30 calendar days of receipt of this document to the attention of the following me at this mailing address:

Patricia T. Mitchell
P.O. Box 515
Alpine, CA 91903

Your letter will be included as part of the project record that is filed with the ACC. If you have any further questions or would like to discuss this document, please call me at 619.241.3330.

Sincerely,

Patricia T. Mitchell

Patricia T. Mitchell, M.A., RPA
Senior Project Archaeologist

Copies:
Randy Schroeder, Envalue
file

kp environmental

kp environmental. LLC
2387 Montgomery Ave.
Cardiff By The Sea
California 92007
Tel 619.241.3330

Mr. Peter Steere
Program Manager, Cultural Affairs Department
Tohono O'odham Nation
P.O. Box 837
Sells, AZ 85634

RE: Class I Cultural Resources Report for the Proposed Agua Caliente Solar Project.

Dear Mr. Steere:

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Phone:
619.241.3330

Email:
tmitchell@kpenvironmental.com

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Senior Project Archaeologist

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kp environmental

kp environmental, LLC
2387 Montgomery Ave.
Cardiff By The Sea
California 92007
Tel 619.241.3330

Mr. Gary Gilbert
Cultural Resource Technician II
Ak-Chin Indian Community
42507 W. Peters and Nall Road
Maricopa, AZ 85238

RE: Class I Cultural Resources Report for the Proposed Agua Caliente Solar Project.

Dear Mr. Gilbert:

Date:
May 8, 2009

Contact:
Trish Mitchell

Phone:
619.241.3330

Email:
tmitchell@kpenvironmental.com

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kp environmental

kp environmental, LLC
2387 Montgomery Ave.
Cardiff By The Sea
California 92007
Tel 619.241.3330

Ms. Nancy Nelson
Cultural Resource Manager
Ak-Chin Him Dak Eco Museum Road
Ak-Chin Indian Community
47685 North Eco Museum Road
Maricopa, AZ 85239

RE: Class I Cultural Resources Report for the Proposed Agua Caliente Solar Project.

Dear Ms. Nelson:

Date:
May 8, 2009

Contact:
Trish Mitchell

Phone:
619.241.3330

Email:
tmitchell@kpenvironmental.com

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Senior Project Archaeologist

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kp environmental

kp environmental, LLC
2387 Montgomery Ave.
Cardiff By The Sea
California 92007
Tel 619.241.3330

Ms. Karen Ray
Coordinator Cultural Resources
Fort McDowell Yavapai Nation
P.O. Box 17779
Fountain Hills, AZ 85269

RE: Class I Cultural Resources Report for the Proposed Agua Caliente Solar Project.

Dear Ms. Ray:

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Senior Project Archaeologist

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kp environmental

kp environmental. LLC
2387 Montgomery Ave.
Cardiff By The Sea
California 92007
Tel 619.241.3330

Mr. Barnaby Lewis
Tribal Historic Preservation Officer
Gila River Indian Community
P.O. Box 2140
Sacaton, AZ 85247

RE: Class I Cultural Resources Report for the Proposed Agua Caliente Solar Project.

Dear Mr. Lewis:

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Email:
tmitchell@kpenvironmental.com

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Senior Project Archaeologist

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kp environmental

kp environmental, LLC
2387 Montgomery Ave.
Cardiff By The Sea
California 92007
Tel 619.241.3330

Mr. Lee Kuwanwisiwma
Director Cultural Preservation Office
The Hopi Tribe
P.O. Box 123
Kykotsmovi, AZ 86039

RE: Class I Cultural Resources Report for the Proposed Agua Caliente Solar Project.

Dear Mr. Kuwanwisiwma:

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kp environmental. LLC
2387 Montgomery Ave.
Cardiff By The Sea
California 92007
Tel 619.241.3330

Ms. Joni Ramos
President
Salt River Pima-Maricopa Indian Community
10005 East Osborn Road
Scottsdale, AZ 85256

RE: Class I Cultural Resources Report for the Proposed Agua Caliente Solar Project.

Dear Ms. Ramos:

Date:
May 8, 2009

Contact:
Trish Mitchell

Phone:
619.241.3330

Email:
tmitchell@kpenvironmental.com

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kp environmental, LLC
2387 Montgomery Ave.
Cardiff By The Sea
California 92007
Tel 619.241.3330

Mr. E. George Ray, Director
Colorado River Indian Tribes Museum
Route 1, Box 23-B
Parker, AZ 85344

RE: Class I Cultural Resources Report for the Proposed Agua Caliente Solar Project.

Dear Mr. Ray:

Agua Caliente Solar, LLC proposes to construct a new solar generating facility that will utilize either photovoltaic (PV) technology or concentrating solar thermal power (CSP) with proven parabolic trough technology. If the Agua Caliente Solar Project (Project) is developed using PV technology, the Project will utilize crystalline silicon, or possibly thin film, PV technology on single-axis trackers, or fixed tilt supports. The Project is located in Yuma County approximately 10 miles north of Dateland, Arizona about 45 miles west of Gila Bend, Arizona and 65 miles east of Yuma, Arizona. There is an associated switchyard/substation project named the APS Q43 Substation Project that will be located on the same property with the Agua Caliente Solar Project. I have enclosed a copy of the Class I Cultural Resources Report document prepared by kp environmental with a study area that supports both projects for your review and comment.

Date:
May 22, 2009

Contact:
Trish Mitchell

Phone:
619.241.3330

Email:
tmitchell@kpenvironmental.com

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kp environmental

Indian Community, Tohono O'odham Nation, the Yavapai-Prescott Indian Tribe, and the Yavapai-Apache Tribe.

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2387 Montgomery Ave.
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California 92007
Tel 619.241.3330

Mr. Greg Glassco, Director
Cultural Research Program
Yavapai-Prescott Indian Tribe
530 E. Merritt Street
Prescott, AZ 86301

RE: Class I Cultural Resources Report for the Proposed Agua Caliente Solar Project.

Dear Mr. Glassco:

Agua Caliente Solar, LLC proposes to construct a new solar generating facility that will utilize either photovoltaic (PV) technology or concentrating solar thermal power (CSP) with proven parabolic trough technology. If the Agua Caliente Solar Project (Project) is developed using PV technology, the Project will utilize crystalline silicon, or possibly thin film, PV technology on single-axis trackers, or fixed tilt supports. The Project is located in Yuma County approximately 10 miles north of Dateland, Arizona about 45 miles west of Gila Bend, Arizona and 65 miles east of Yuma, Arizona. There is an associated switchyard/substation project named the APS Q43 Substation Project that will be located on the same property with the Agua Caliente Solar Project. I have enclosed a copy of the Class I Cultural Resources Report document prepared by kp environmental with a study area that supports both projects for your review and comment.

Date:
May 22, 2009

Contact:
Trish Mitchell

Phone:
619.241.3330

Email:
tmitchell@kpenvironmental.com

The Arizona State Museum has previously stated that submission of a Class I inventory document is not a standard procedure, but Agua Caliente Solar has been directed to do so by the Arizona Corporation Commission (ACC). The project must receive a Certificate of Environmental Compatibility prior to any ground disturbing construction activities. The Class I document includes the locations and descriptions of cultural resources listed in public records within one mile of the alternative routes. The document was developed as a planning document to guide additional research. A thorough description of the projects, their location, previous cultural resource projects, and known cultural resource sites are provided in the enclosed document.

The proposed projects are not a Federal undertaking as defined in 36 CFR 800 and, therefore, are not subject to the National Historic Preservation Act, Section 106 consultation process. The proposed transmission lines are located on private lands and do not cross any tribal lands and no information is included regarding any cultural resources on tribal lands. Furthermore, traditional cultural places, religious sites, and traditional use areas are not included in the document. All cultural resource locational information, including maps, will be deleted from any copies of the document available to the general public. This document has been sent to the following agencies and communities for review at this time: the Arizona State Historic Preservation Office, the Ak-Chin Indian Community, the Cocopah Tribe, the Fort McDowell Yavapai Nation, the Fort Mohave Indian Tribe, the Fort Yuma-Quechan

Tribe, the Gila River Indian community, the Hopi Tribe, the Salt River Pima-Maricopa Indian Community, Tohono O'odham Nation, the Yavapai-Prescott Indian Tribe, and the Yavapai-Apache Tribe.

Agua Caliente Solar and kp environmental greatly appreciate your comments and will address any issues and concerns that you may have. Please provide your comments in 30 calendar days of receipt of this document to the attention of the following me at this mailing address:

Patricia T. Mitchell
P.O. Box 515
Alpine, CA 91903

Your letter will be included as part of the project record that is filed with the ACC. If you have any further questions or would like to discuss this document, please call me at 619.241.3330.

Sincerely,

Patricia T Mitchell

Patricia T. Mitchell, M.A., RPA
Senior Project Archaeologist

Copies:
Randy Schroeder, Envalue
file

kp environmental

kp environmental, LLC
2387 Montgomery Ave.
Cardiff By The Sea
California 92007
Tel 619.241.3330

Ms. Delores Plunkett, Manager
Ms. Monica Van Ansdale, Director
Yavapai Cultural Program
Tribal Building
2400 W. Datsi Street
Camp Verde, AZ 86322

RE: Class I Cultural Resources Report for the Proposed Agua Caliente Solar Project.

Dear Ms. Plunkett and Ms. Ansdale:

Date:
May 22, 2009

Contact:
Trish Mitchell

Phone:
619.241.3330

Email:
[redacted]

Agua Caliente Solar, LLC proposes to construct a new solar generating facility that will utilize either photovoltaic (PV) technology or concentrating solar thermal power (CSP) with proven parabolic trough technology. If the Agua Caliente Solar Project (Project) is developed using PV technology, the Project will utilize crystalline silicon, or possibly thin film, PV technology on single-axis trackers, or fixed tilt supports. The Project is located in Yuma County approximately 10 miles north of Dateland, Arizona about 45 miles west of Gila Bend, Arizona and 65 miles east of Yuma, Arizona. There is an associated switchyard/substation project named the APS Q43 Substation Project that will be located on the same property with the Agua Caliente Solar Project. I have enclosed a copy of the Class I Cultural Resources Report document prepared by kp environmental with a study area that supports both projects for your review and comment.

The Arizona State Museum has previously stated that submission of a Class I inventory document is not a standard procedure, but Agua Caliente Solar has been directed to do so by the Arizona Corporation Commission (ACC). The project must receive a Certificate of Environmental Compatibility prior to any ground disturbing construction activities. The Class I document includes the locations and descriptions of cultural resources listed in public records within one mile of the alternative routes. The document was developed as a planning document to guide additional research. A thorough description of the projects, their location, previous cultural resource projects, and known cultural resource sites are provided in the enclosed document.

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kp environmental

McDowell Yavapai Nation, the Fort Mohave Indian Tribe, the Fort Yuma-Quechan Tribe, the Gila River Indian community, the Hopi Tribe, the Salt River Pima-Maricopa Indian Community, Tohono O'odham Nation, the Yavapai-Prescott Indian Tribe, and the Yavapai-Apache Tribe.

Agua Caliente Solar and kp environmental greatly appreciate your comments and will address any issues and concerns that you may have. Please provide your comments in 30 calendar days of receipt of this document to the attention of the following me at this mailing address:

Patricia T. Mitchell
P.O. Box 515
Alpine, CA 91903

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Sincerely,

Patricia T. Mitchell

Patricia T. Mitchell, M.A., RPA
Senior Project Archaeologist

Copies:
Randy Schroeder, Envalue
file

kp environmental

kp environmental, LLC
2367 Montgomery Ave.
Cardiff By The Sea
California 92007
Tel 619.241.3330

Ms. Jill McCormick
Cultural Resources Manager
Cocopah Tribe
County 15th & Avenue G
Somerton, AZ 85350

RE: Class I Cultural Resources Report for the Proposed Agua Caliente Solar Project.

Dear Ms. McCormick:

Agua Caliente Solar, LLC proposes to construct a new solar generating facility that will utilize either photovoltaic (PV) technology or concentrating solar thermal power (CSP) with proven parabolic trough technology. If the Agua Caliente Solar Project (Project) is developed using PV technology, the Project will utilize crystalline silicon, or possibly thin film, PV technology on single-axis trackers, or fixed tilt supports. The Project is located in Yuma County approximately 10 miles north of Dateland, Arizona about 45 miles west of Gila Bend, Arizona and 65 miles east of Yuma, Arizona. There is an associated switchyard/substation project named the APS Q43 Substation Project that will be located on the same property with the Agua Caliente Solar Project. I have enclosed a copy of the Class I Cultural Resources Report document prepared by kp environmental with a study area that supports both projects for your review and comment.

Date:
May 22, 2009

Contact:
Trish Mitchell

Phone:
619.241.3330

Email:
[redacted]

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kp environmental

Tribe, the Gila River Indian community, the Hopi Tribe, the Salt River Pima-Maricopa Indian Community, Tohono O'odham Nation, the Yavapai-Prescott Indian Tribe, and the Yavapai-Apache Tribe.

Agua Caliente Solar and kp environmental greatly appreciate your comments and will address any issues and concerns that you may have. Please provide your comments in 30 calendar days of receipt of this document to the attention of the following me at this mailing address:

Patricia T. Mitchell
P.O. Box 515
Alpine, CA 91903

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Sincerely,

Patricia T. Mitchell

Patricia T. Mitchell, M.A., RPA
Senior Project Archaeologist

Copies:
Randy Schroeder, Envalue
file

kp environmental

kp environmental, LLC
2387 Montgomery Ave.
Cardiff By The Sea
California 92007
Tel 619.241.3330

Ms. Linda Otero
Director, Ahamakav Cultural Society
Fort Mohave Indian Tribe
P.O. Box 5990
(10225 S Harbor Ave)
Mohave Valley, AZ 86440

RE: Class I Cultural Resources Report for the Proposed Agua Caliente Solar Project.

Dear Ms. Otero:

Date:
May 22, 2009

Contact:
Trish Mitchell

Phone:
619.241.3330

Email:
tmitchell@kpenvironmental.com

Agua Caliente Solar, LLC proposes to construct a new solar generating facility that will utilize either photovoltaic (PV) technology or concentrating solar thermal power (CSP) with proven parabolic trough technology. If the Agua Caliente Solar Project (Project) is developed using PV technology, the Project will utilize crystalline silicon, or possibly thin film, PV technology on single-axis trackers, or fixed tilt supports. The Project is located in Yuma County approximately 10 miles north of Dateland, Arizona about 45 miles west of Gila Bend, Arizona and 65 miles east of Yuma, Arizona. There is an associated switchyard/substation project named the APS Q43 Substation Project that will be located on the same property with the Agua Caliente Solar Project. I have enclosed a copy of the Class I Cultural Resources Report document prepared by kp environmental with a study area that supports both projects for your review and comment.

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kp environmental

McDowell Yavapai Nation, the Fort Mohave Indian Tribe, the Fort Yuma-Quechan Tribe, the Gila River Indian community, the Hopi Tribe, the Salt River Pima-Maricopa Indian Community, Tohono O'odham Nation, the Yavapai-Prescott Indian Tribe, and the Yavapai-Apache Tribe.

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Patricia T. Mitchell
P.O. Box 515
Alpine, CA 91903

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Sincerely,

Patricia T. Mitchell

Patricia T. Mitchell, M.A., RPA
Senior Project Archaeologist

Copies:
Randy Schroeder, Envalue
file

kp environmental

kp environmental, LLC
2387 Montgomery Ave.
Cardiff By The Sea
California 92007
Tel 619.241.3330

Ms. Bridget Nash-Chrabascz
Historic Preservation Officer
Fort Yuman-Quechan Tribe
P.O. Box 1899
Yuma, AZ 85366

RE: Class I Cultural Resources Report for the Proposed Agua Caliente Solar Project.

Dear Ms. Nash-Chrabascz:

Agua Caliente Solar, LLC proposes to construct a new solar generating facility that will utilize either photovoltaic (PV) technology or concentrating solar thermal power (CSP) with proven parabolic trough technology. If the Agua Caliente Solar Project (Project) is developed using PV technology, the Project will utilize crystalline silicon, or possibly thin film, PV technology on single-axis trackers, or fixed tilt supports. The Project is located in Yuma County approximately 10 miles north of Dateland, Arizona about 45 miles west of Gila Bend, Arizona and 65 miles east of Yuma, Arizona. There is an associated switchyard/substation project named the APS Q43 Substation Project that will be located on the same property with the Agua Caliente Solar Project. I have enclosed a copy of the Class I Cultural Resources Report document prepared by kp environmental with a study area that supports both projects for your review and comment.

Date:
May 22, 2009

Contact:
Trish Mitchell

Phone:
619.241.3330

Email:
tmitchell@kpenvironmental.com

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Agua Caliente Solar and kp environmental greatly appreciate your comments and will address any issues and concerns that you may have. Please provide your comments in 30 calendar days of receipt of this document to the attention of the following me at this mailing address:

Patricia T. Mitchell
P.O. Box 515
Alpine, CA 91903

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Sincerely,

Patricia T. Mitchell, M.A., RPA
Senior Project Archaeologist

Copies:
Randy Schroeder, Envalue
file

Arizona® State Parks

"Managing and conserving Arizona's natural, cultural and recreational resources"

May 27, 2009

Trish Mitchell
kp environmental, LLC
2387 Montgomery Avenue
Cardiff By the Sea, CA 92007

RE: Agua Caliente Solar Project
State Act Consultation
SHPO-2009-0714 (40024)

Ms. Mitchell:

Thank you for initiating consultation with the State Historic Preservation Office (SHPO) pursuant to A.R.S. § 41-864 for the Arizona Corporation Commission regarding an application by Agua Caliente Solar for a Certificate of Environmental Compatibility in Yuma County, Arizona. We have reviewed the submitted materials and offer the following comments.

The submitted document [*Class I Cultural Resource Report for the Proposed Agua Caliente Solar Project and the assocated APS Q43 Substation Project, Yuma County, Arizona*] is not very informative given that essentially all of the project area, save the railroad and power line right-of-way, has **not** been inspected for cultural resources. The cover letter notes that the "Arizona State Museum has previously stated that submission of a Class I inventory document is not a standard procedure, but Agua Caliente Solar has been directed to do so by the Arizona Corporation Commission." We agree with the Arizona State Museum, and recommend that the **project area be inspected for cultural resources by a qualified archaeologist** in order to locate and evaluate any existing cultural remains within the project area. In addition, the Governor of Arizona's Executive Order 2006-14 regarding tribal consultation should be noted, given the tribal interests in the area where project area is located. The applicant is reminded that Arizona State Law requires that if human remains or burial goods are encountered during any ground-disturbing activities, even on private lands [i.e., A.R.S. § 41-865], work in the immediate vicinity must cease and the Director of the Arizona State Museum promptly notified.

We appreciate your cooperation with this office in considering the potential impacts of development on cultural resources situated in Arizona. If you have any questions or comments, please contact me at (602) 542-7140 or electronically at djacobs@azstateparks.gov.

Sincerely,

David Jacobs
Compliance Specialist/Archaeologist
State Historic Preservation Office

CC: Jon Shumaker, APS

Arizona State Parks
1300 W. Washington
Phoenix, AZ 85007

Tel & TTY: 602.542.4174
AZStateParks.com

800.285.3703 from
(520 & 928) area codes

General Fax:
602.542.4180

Director's Office Fax:
602.542.4188

TOHONO O'ODHAM NATION
CULTURAL AFFAIRS PROGRAM
P.O. BOX 837 • SELLS, ARIZONA 85634
Telephone (520) 383-3622 • Fax (520) 383-3377

MEMORANDUM

DATE: May 14, 2009

TO: Patricia T. Mitchell, Senior Project Archaeologist
kp Environmental, LLC
2387 Montgomery Avenue
Cardiff by the Sea, California 92007

CC: Linda Otero, Cultural Resources Specialist, Fort Mohave Tribe
Jill McCormick, Cultural Resource Manager, Cocopah tribe
Jo Anne Medley, Arizona SHPO
John Madsen, Arizona State Museum

FROM: Peter L. Steere, Manager, Cultural Affairs Office PLS
Tohono O'odham nation, P.O. Box 837, Sells, Arizona 85634

RE: Agua Caliente Solar Project

Thank you for consulting with the Tohono O'odham Nation on the proposed Aqua Caliente Solar project located in Yuma County, approximately 10 miles north of Dateland, Arizona.

Thank you for sending the results of the Class I Survey that reviews previous work in the area and notes sites previously recorded that are in the project area.

Comments and suggestions:

1. You need also to consult with the Cocopah Tribe, the Colorado River Tribe, the Quechan Tribe and the Yavapai Tribe in addition to the tribes you have already consulted with.

2. Consultation with interested tribes regarding traditional cultural places, religious sites, traditional-use areas needs to be included in your project plans (meetings and field trips to project area suggested).

3. The Class I survey is fine in its context – however most of the project area however has not been surveyed.

4. We concur with your recommendation that at a minimum a Class II Survey needs to be completed for the 2,400 acre project area and any additional infrastructure such as roads, power lines, phone lines, etc. Report of survey results should be sent to all interested tribes.

5. In addition, we recommend that a Class III (100%) cultural resource survey be completed and a report of the survey results be sent to all interested tribes

6. We would like to extend an invitation for you and your colleagues to come to the Four Southern Tribes Cultural Resources Working Group that includes the Tohono O'odham Nation, Gila River Indian Community, Ak Chin Indian Community, the Salt River Pima-Maricopa Indian Community and meets every month. The Tohono O'odham Nation is hosting this meeting in June and July. It

also may be necessary to hold another meeting in Yuma or Phoenix or onsite that all interested tribes can be invited to.

7. Please send our office project engineering maps and full size USGS Quad Maps that have the project laid out on them.

8. Please send our office copies of biological survey reports related to the Endangered Species Act listings.

9. The lands included in this project area represent traditional use areas for many tribes who are concerned about the protection and preservation of cultural sites that may occur in the project area.

10. In addition cultural and natural landscape studies that are not mentioned in your report need to be completed since the construction of these solar arrays will definitely have an impact on the cultural and natural landscapes of the project area.

11. The question of whether this is a Federal undertaking due to Federal permitting and possible Federal funding remains to be determined.

We would recommend that you proceed on the assumption that Section 106 process will be in place.

THE HOPI TRIBE

CHAIRMAN

VICE-CHAIRMAN

May 18, 2009

Patricia T. Mitchell, Senior Project Manager
kp environmental
P.O Box 515
Alpine, California 91903

Dear Ms. Mitchell,

Thank you for your correspondence dated May 8, 2009, regarding an enclosed Class I cultural resources report for the proposed Agua Caliente Solar Project in Yuma County. The Hopi Tribe claims cultural affiliation to prehistoric cultural groups in Arizona, including the Hohokam prehistoric cultural group, and the Hopi Cultural Preservation Office supports identification and avoidance of prehistoric archaeological sites and Traditional Cultural Properties. Therefore, we appreciate your continuing solicitation of our input and your efforts to address our concerns.

The Hopi Cultural Preservation Office considers the archaeological sites of our ancestors to be Traditional Cultural Properties. We have reviewed the enclosed Class I survey report that does not identify any prehistoric sites in the proposed 15,000 acre project area. However, we concur that a sample survey plan be developed and implemented. Therefore, we look forward to receiving a copy of that survey report for review and comment.

Should you have any questions or need additional information, please contact Terry Morgart at the Hopi Cultural Preservation Office. Thank you again for your consideration.

Respectfully,

Leigh J. Kuwanwisiwma, Director
Hopi Cultural Preservation Office

xc: Arizona State Historic Preservation Office

AK-CHIN INDIAN COMMUNITY

42507 W. Peters & Nall Road · Maricopa, Arizona 85238 Telephone: (520) 568-1000 · Fax: (520) 568-1001

May 14, 2009

Patricia T. Mitchell
Senior Project Archaeologist
P.O. Box 515
Alpine, CA 91903

Re: Proposed Agua Caliente Solar Project and Associated APS Q43 Substation Project

Dear Ms. Mitchell:

The Ak-Chin Indian Community is in receipt of your letter dated May 8, 2009 regarding the Agua Caliente Solar, LLC proposed construction of a new solar generating facility, referred to as the Agua Caliente Solar Project. There is also an associated switchyard/substation project named the APS Q43 Substation Project that will be located on the same property with the Agua Caliente Solar Project. This property is located in Yuma County, approximately 10 miles north of Dateland, Arizona. We also did receive the Class I Cultural Resources Report that accompanied the letter.

Based on the location for these two (2) projects, the Ak-Chin Indian Community will defer comments pertaining to both projects to the Tohono O'Odham Nation.

If you should have any questions, please contact Mrs. Caroline Antone, Cultural Resources Manager at (520) 568-1372 or Mr. Gary Gilbert, Technician II at (520) 568-1369.

Sincerely,

Louis J. Manuel Jr., Chairman
Ak-Chin Indian Community

Cc: Cultural Resources

Exhibit F

EXHIBIT F – RECREATIONAL PURPOSES AND ASPECTS

As stated in Arizona Administrative Code R14-3-219:

> *"State the extent, if any, the proposed site or route will be available to the public for recreational purposes, consistent with safety considerations and regulations, and attach any plans the Applicant may have concerning the development of the recreational aspects of the proposed site or route."*

The Project is located in Yuma County approximately 10 miles north of Dateland, Arizona about 45 miles west of Gila Bend, Arizona and 65 miles east of Yuma, Arizona. **Figure ES-1** shows the general location of the Project.

The Project will be located on a portion of a 3,800 acre private agricultural property referred to as the "Whitewing Ranch" (Property) located along Palomas Road.

The Project will not be available for public recreation purposes. However, the area around the Property boundary would be available for recreational uses.

EXISTING CONDITIONS

Regional recreation information for the surrounding areas was gathered from Yuma County and the BLM. Currently, there are no existing or planned designated recreational facilities or areas in the immediate vicinity of the Project Site or the Whitewing Ranch.

The BLM has recently completed the Resource Management Plan (RMP) for the Yuma Field Office. This RMP provides the management direction for the BLM lands in vicinity of the Project Site. The prescribed recreation setting and recreation classification under the BLM's Recreation Opportunity Spectrum (ROS) for the BLM lands that are immediately adjacent to the Whitewing Ranch is Rural Developed, which acknowledges the location of these lands interspersed with agricultural and other development. The BLM has designated these lands as a Dispersed Use Recreation Management Zone and plans to manage these lands for such dispersed recreational uses such as hunting, camping, OHV riding, hiking, wildlife and wildflower viewing.

.

The BLM has also designated the areas surrounding the Whitewing Ranch as Limited for off-highway vehicle (OHV) use. Limited OHV Management Areas are where OHV travel is limited at certain times, in certain areas, and/or to certain vehicular use.

The closest proposed recreation area described in the Yuma County 2010 Comprehensive Plan (Open Space and Recreational Resources Managed Resource

Lands) is the Camp Hyder U.S. Army Training Center. This is the closest planned recreational facility and would be located on BLM land about 2.7 miles west of the Project Site. This area has been identified as an area that is planned to be preserved as open space and recreational resources. In the Yuma County Comprehensive Plan, this park is proposed to be approximately 2,348 acres.

POTENTIAL EFFECTS

There will be no public access allowed to the Project Site for recreation or other uses. Also, there are no existing or planned recreational facilities within the nearby area. Recreation use of adjacent public lands is limited. Therefore, no recreational impacts are anticipated to result from the development and operation of the Project. It would not interfere with any existing or potential recreational opportunities.

REFERENCES

City of, Yuma and Yuma County. Joint Land Use Plan Adopted in 1996, and updated in 2007. [Online] Located at: http://www.co.yuma.az.us/dds/ord/2010/TC.htm Accessed November, 2008.

County of, Yuma. 2010 Comprehensive Plan Adopted in 2001, and updated in 2006. [Online] Located at: http://www.co.yuma.az.us/dds/ord/2010/Whole%20Plan.pdf Accessed November, 2008.

County of, Yuma. Yuma, AZ Profile. Communications Division of the Arizona Department of Commerce. 2002. [Online] Located at: http://www.co.yuma.az.us/pdf/yuma.pdf Accessed November, 2008.

Bureau of Land Management. Yuma Field Office Resource Management Plan and Environmental Impact Statement. 2008. Located at: http://www.blm.gov/az/st/en/prog/planning/yuma_plan/reports/prmp.html

Exhibit G

EXHIBIT G –CONCEPTS OF TYPICAL FACILITIES

As stated in Arizona Corporation Commission Rules of Practice and Procedure R14-3-219:

> *"Attach any artist's or architect's conception of the proposed plant or transmission line structures and switchyards which applicant believes may be informative to the committee."*

Figure G-1 contains a visual rendering of the Project. The rendering presents an aerial view of the entire Project.

Figure G-2 contains representative tower, turning tower, and dead end structures that may be used for the Project.

Figure G-1

Visual Rendering of APS Q43 Transmission Line and Switchyard Interconnection Project

Looking Northeast

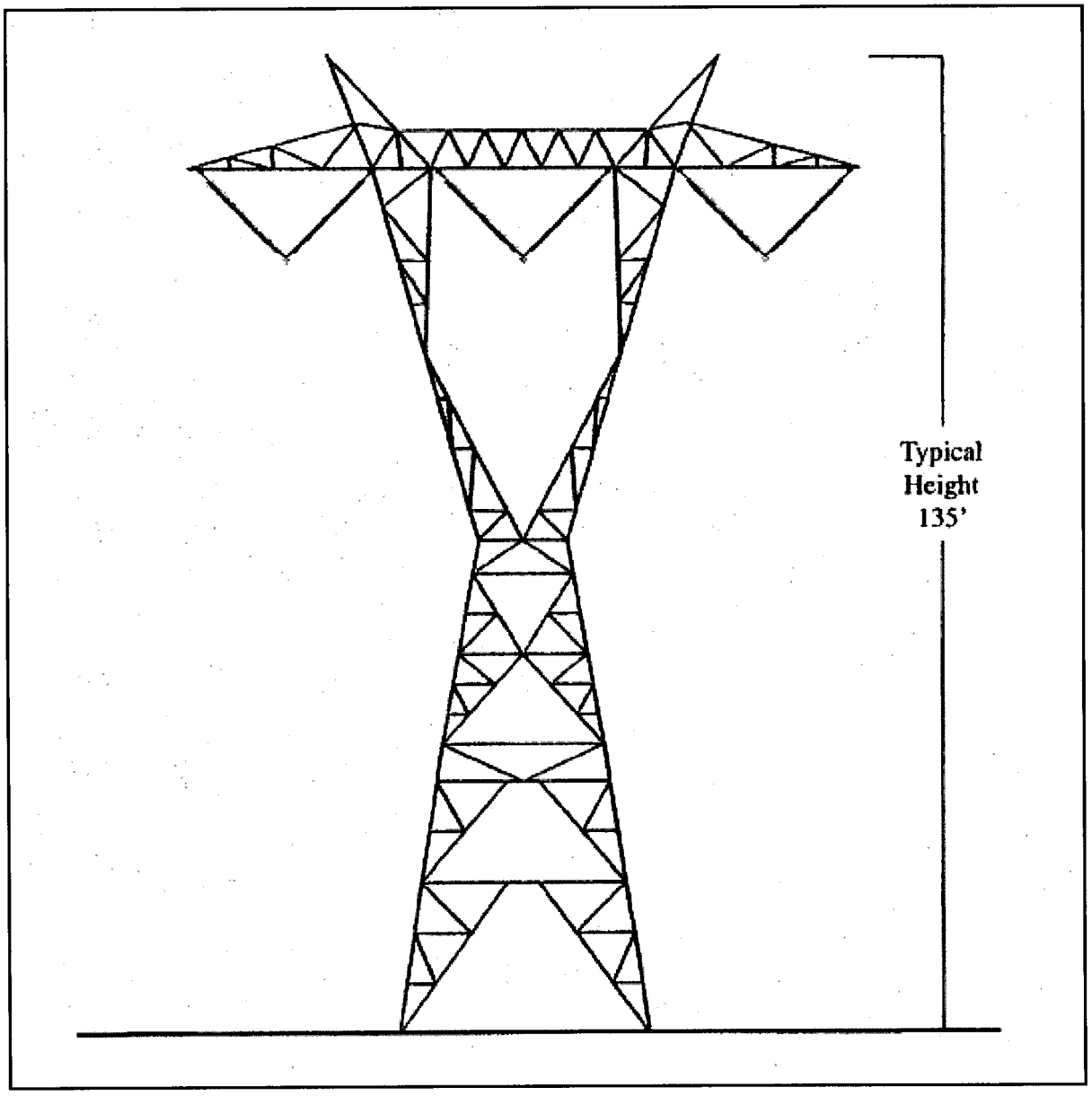

Figure G-2a
Typical 500kV Single-Circuit Steel Lattice Structure

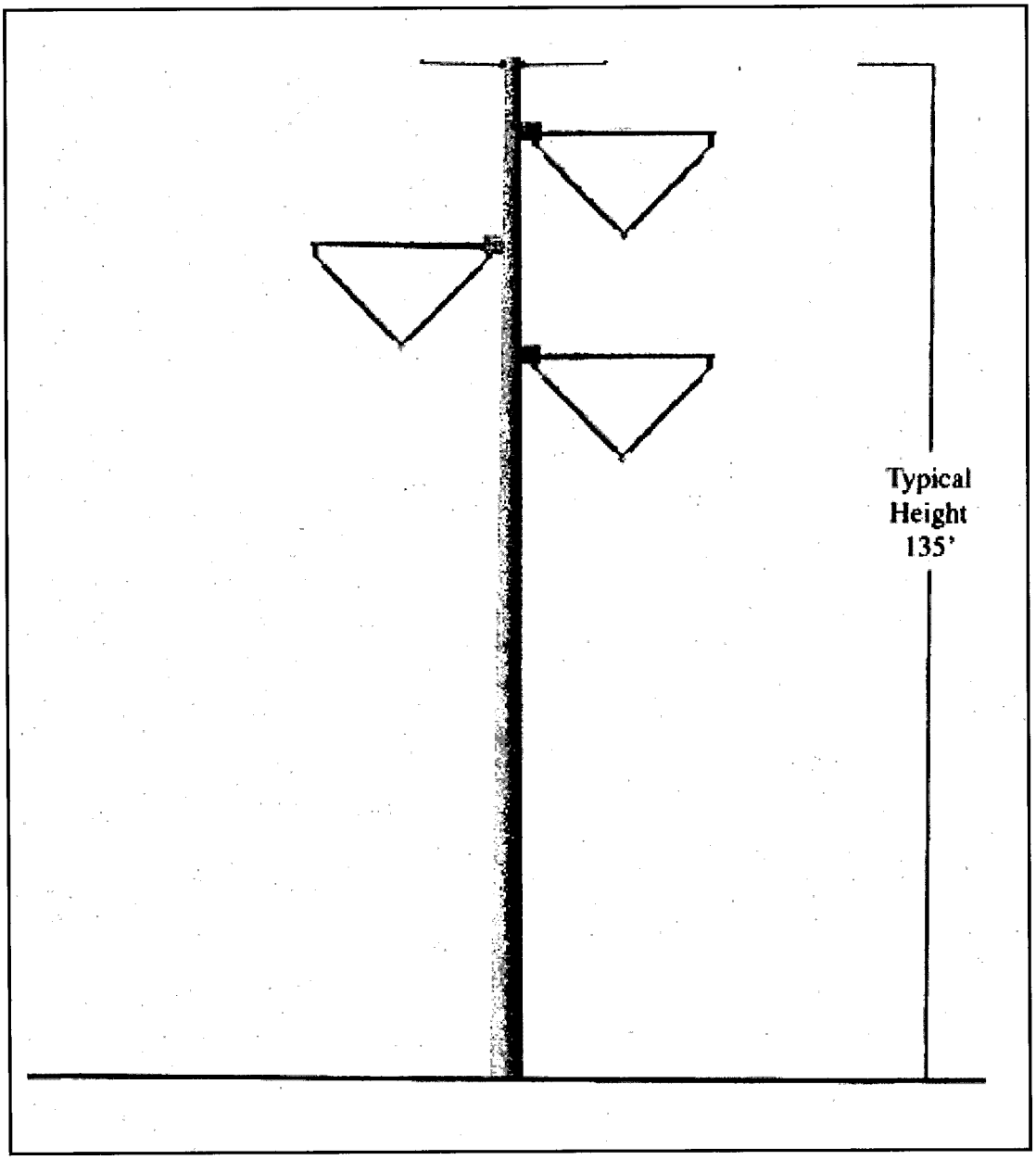

Figure G-2b
Typical 500kV Single-Circuit Tubular Steel Pole Structure

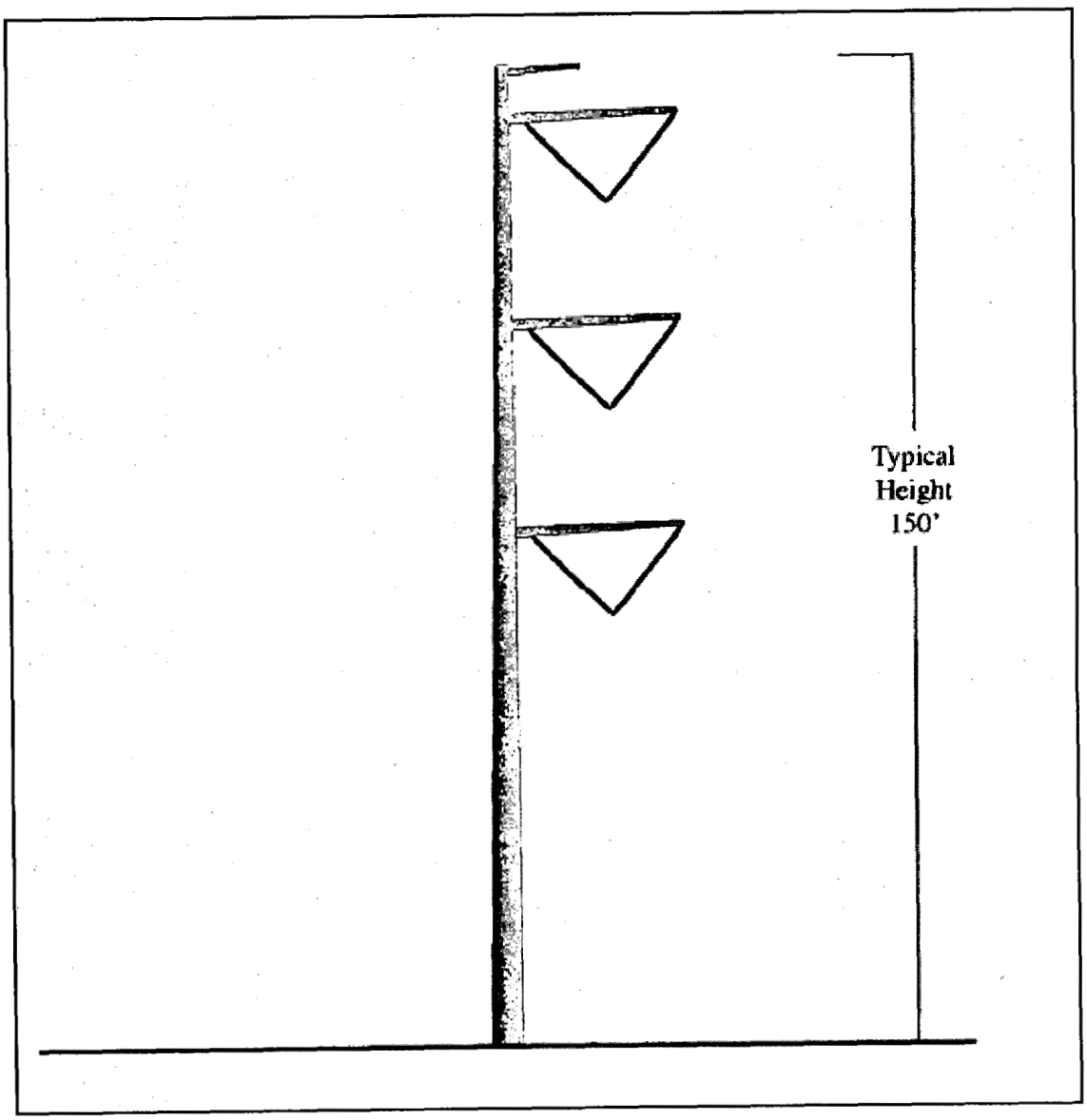

Figure G-2c
Typical 500kV Tangent Vertical Configuration

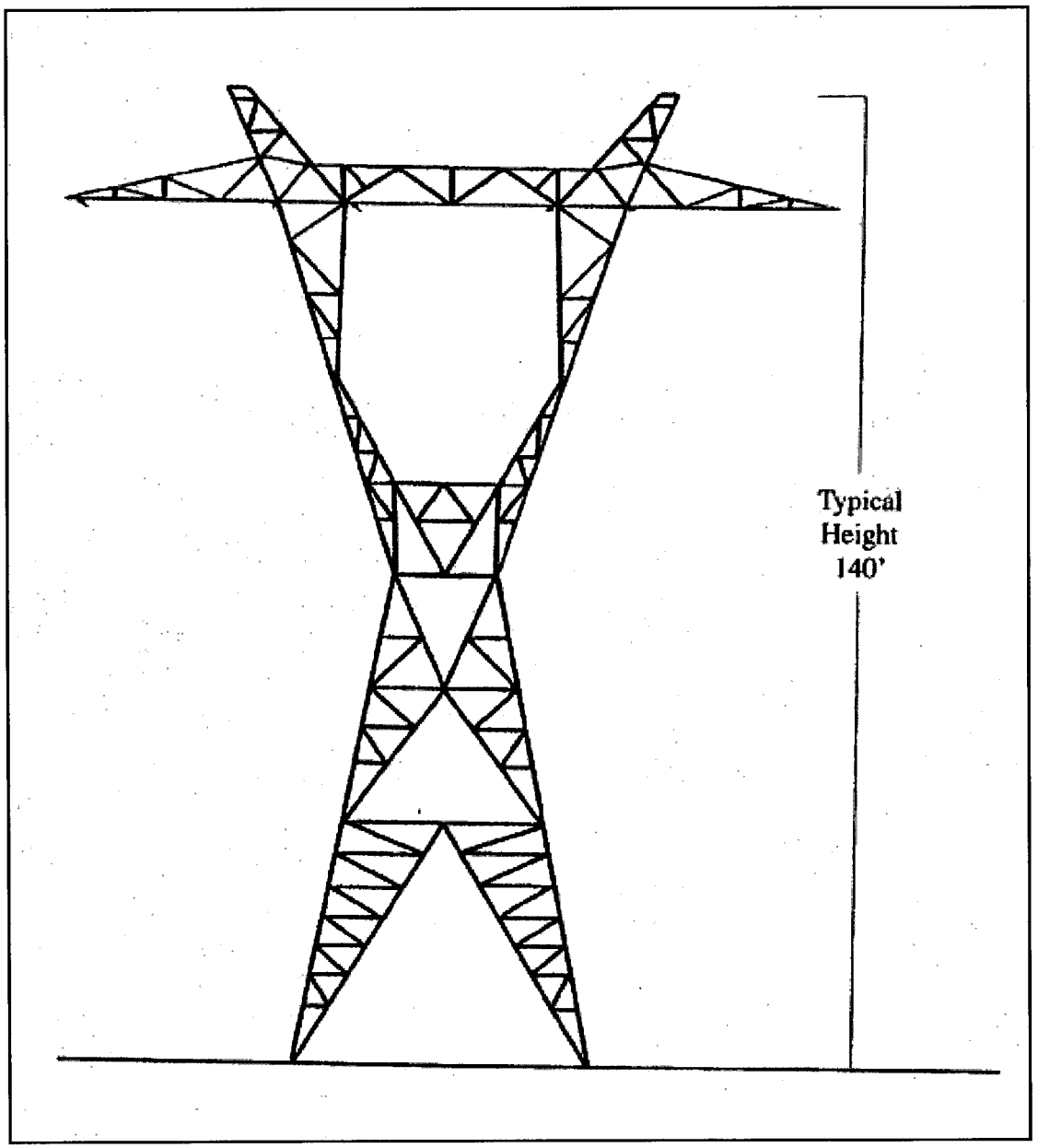

Figure G-2d
Typical 500kV Single-Circuit
Dead-End Steel Lattice Structure

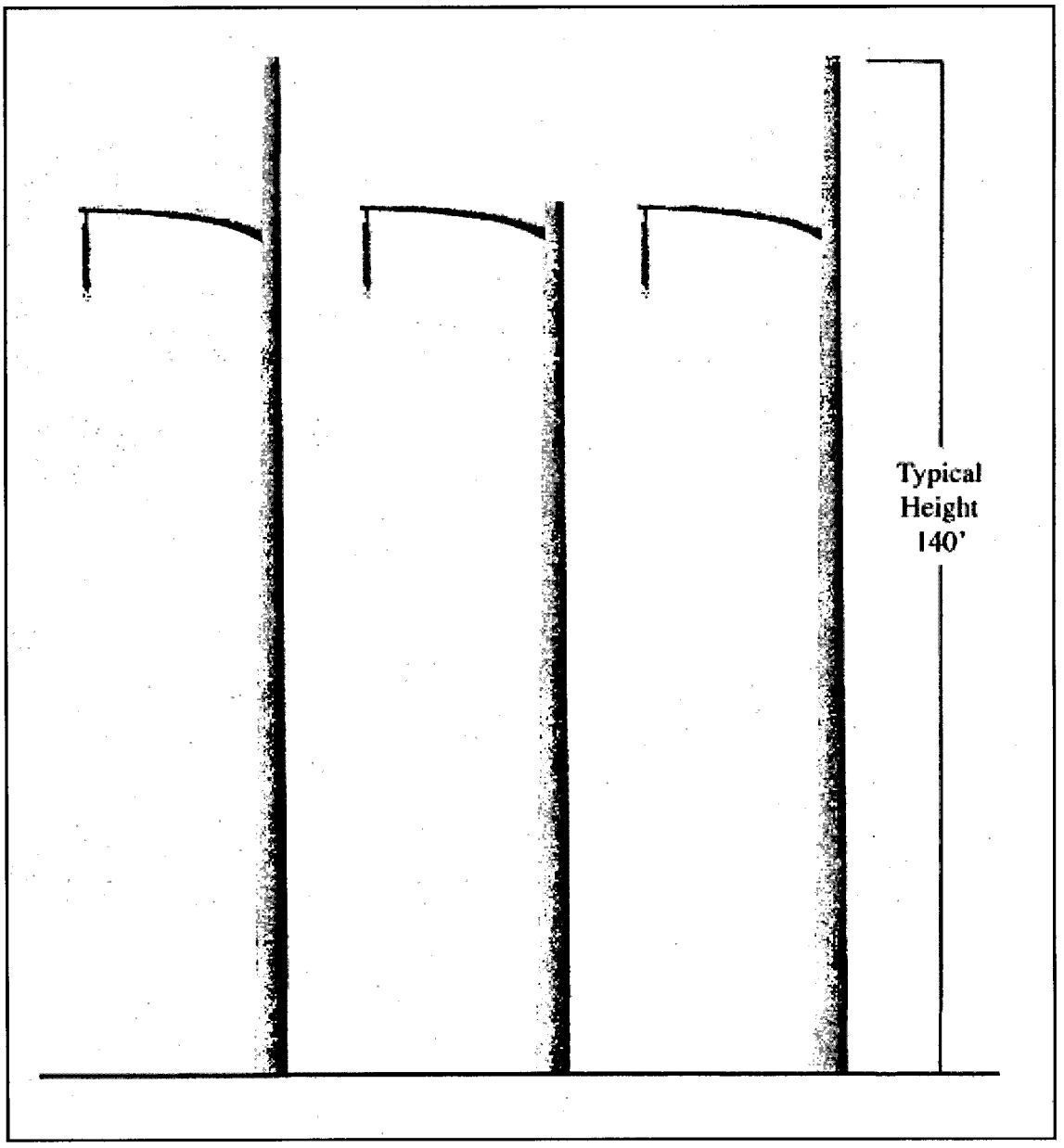

Figure G-2e
Typical 500kV Single-Circuit
Dead-End Steel Three-Pole Structure

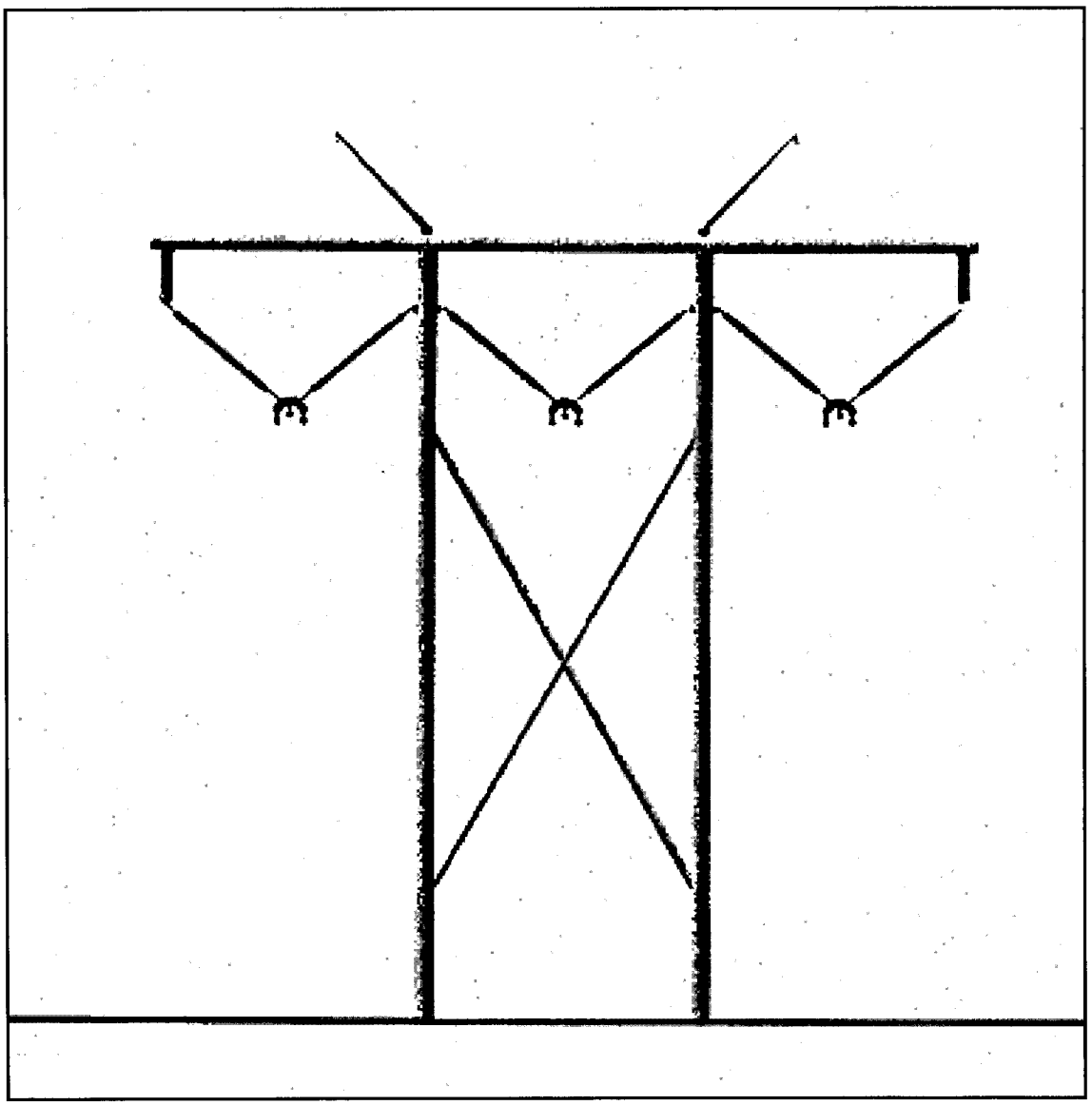

Figure G-2f
Modified 500kV Single-Circuit Steel H-Frame Structure

Exhibit H

EXHIBIT H – EXISTING PLANS

As stated in Arizona Administrative Code R14-3-219:

> *"To the extent Applicant is able to determine, state the existing plans of the state, local government, and private entities for other developments at or in the vicinity of the proposed site or route."*

LOCAL GOVERNMENT PLANS

The Project is located on portion of the 3,800 acre private agricultural property referred to as the "Whitewing Ranch" (Property) under the jurisdiction of Yuma County. The Project Site will occupy approximately 30 acres of the Property.

The relevant plans of Yuma County for the lands in the vicinity of the Project Site are described in Exhibit A. The proposed Project is consistent with the Yuma County Plan.

STATE GOVERNMENT PLANS

There are a number of State-owned parcels in the vicinity of the Project Site. There are no known current development plans for these properties.

FEDERAL GOVERNMENT PLANS

The Bureau of Land Management (BLM) manages the federal lands adjacent to the Property. As discussed in Exhibit A, the BLM has recently completed the Resource Management Plan (RMP) that addresses there plans for managing these lands. There are no plans for development of the lands and they are being managed for limited dispersed uses.

PRIVATE ENTITY PLANS

Residential Development

The only existing plan for residential development within the vicinity of the Project Site is limited to one subdivision that is described below and depicted on **Figure H-1**.

The Dateland Ranch Subdivision was identified through the Yuma County Department of Development Services Internet Mapping and discussions with County staff. In 1997, F&F Capital Investments, LLC, filed a replat for an area about one-half mile south of the Project Site that is referred to as the Dateland Ranch Subdivision.

This was filed with Yuma County as license No. 97-00541. The 3,200 acre property was subdivided into 81 parcels. The subdivision is for 40-acre parcels reserved for residential, recreational, or agricultural purposes. Individual owners cannot re-subdivide their 40 acre parcels. No development of this property has yet occurred as shown by the underlying aerial photo on **Figure H-1**.

Utilities

In the immediate vicinity of the Project, a new, second 500 kV transmission line (known as the Palo Verde – North Gila #2 500kV transmission line) has been approved for construction by the Arizona Corporation Commission and will likely be built within a corridor on the southern portion of the Property. This line was certificated by the Arizona Corporation Commission in Decision No.70127 on January 23, 2008. The switchyard layout and the lines that interconnect the switchyard to the existing Palo Verde -North Gila #1 500kV transmission line are designed to accommodate the planned construction, interconnection and operation of the approved Palo Verde – North Gila #2 500 kV transmission line.

In an action related to this CEC Application, portions of the Project are planned for development of solar energy generating facility named the Agua Caliente Solar Project. The Agua Caliente Solar Project is the subject of a separate CEC application.

POTENTIAL EFFECTS

There are no planned local, state, or federal developments in the vicinity of the Project Site. One private residential development is planned near the Project but it is not actively being developed and it is unknown when or if it will be developed in the future. With the exception of the turning towers located within the ROW of the existing Palo Verde - North Gila #1 500kV transmission line, and the interconnecting lines, the Project would be located north of the existing, inactive UPRR rail line and Palomas Road over one-half mile away providing separation from the potential development should it ever occur.

The Palo Verde - North Gila 500kV #2 transmission line is currently planned to be in-service in 2014[1]. When constructed, this new 500kV transmission line will likely be built within a corridor along the southern edge of the Property and the switchyard has been designed to interconnect to this second 500kV line.

Based on this analysis, the Project will be compatible with all government and private plans in the area.

[1] Based on current APS Ten Year Plan

REFERENCES

City of, Yuma and Yuma County. Joint Land Use Plan Adopted in 1996, and updated in 2007. [Online] Located at: http://www.co.yuma.az.us/dds/ord/2010/TC.htm Accessed November, 2008.

County of, Yuma. 2010 Comprehensive Plan Adopted in 2001, and updated in 2006. [Online] Located at: http://www.co.yuma.az.us/dds/ord/2010/Whole%20Plan.pdf Accessed November, 2008.

County of, Yuma. Yuma County Department of Development Services Internet Mapping. [Online] Located at: http://maps.geocortex.net/imf-5.1.002/imf.jsp?site=yuma_county Accessed November, 2008.

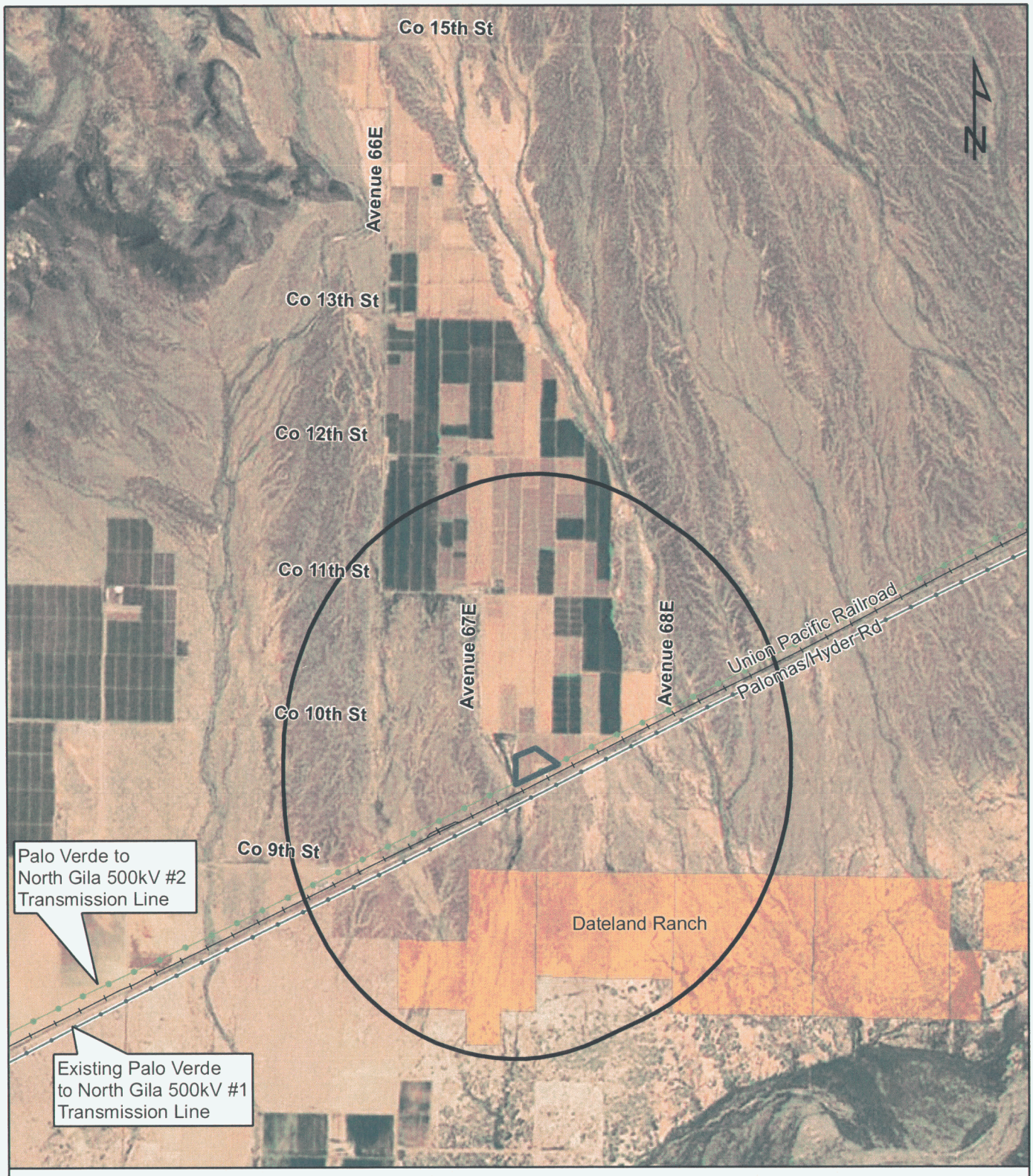
Co 15th St
Avenue 66E
Co 13th St
Co 12th St
Co 11th St
Avenue 67E
Avenue 68E
Union Pacific Railroad
Palomas/Hyder Rd
Co 10th St
Co 9th St
Palo Verde to North Gila 500kV #2 Transmission Line
Dateland Ranch
Existing Palo Verde to North Gila 500kV #1 Transmission Line
N
APS Q43 Project
Project Study Area (2-mile Buffer)
Approved 500kV Transmission Line
500kV Transmission Line
Railroad
Subdivision
Miles
0
1
Scale: 1:62,500
Source
Yuma County Department of Development Services Internet Mapping Application Downloaded Data
APS Q43 500kV TRANSMISSION LINE AND SWITCHYARD INTERCONNECTION PROJECT
CEC Application Exhibit A
Date: 05.12.09
Figure H-1
Author: JAG/JHR
G:\Data\APS_Substation\APS_Substation_Exhibit\H_figure1

Exhibit I

EXHIBIT I –ANTICIPATED NOISE / INTERFERENCE WITH COMMUNICATION SIGNALS

As stated in Arizona Administrative Code R14-3-219:

> *"Describe the anticipated noise emission levels and any interference with communication signals which will emanate from the proposed facilities."*

INTRODUCTION

The Project is located in a remote portion of Yuma County that does not have an applicable noise ordinance. A noise analysis was conducted to determine the potential noise impacts that would be generated from the construction and operation of the proposed Project.

Commonly heard sounds have complex frequency and pressure characteristics. For measuring sound levels in ordinary environments, A-weighted (dBA) correction factors are employed. The A-weighted scale is used in most common sound level (noise) ordinances and standards.

Environmental sound levels are generally described and evaluated in the following ways:

- The equivalent sound pressure level (Leq) is defined as the average sound level, on an energy basis, for a stated period of time (e.g., hourly) at a given location.
- The Ldn is the day/night sound level that was adopted by the Environmental Protection Agency (EPA) as a measure of community sound level exposure (Crocker 1982). EPA defines Ldn as the average A-weighted sound level for a 24-hour period. Nighttime sound levels (10:00 PM. to 7:00 AM.) are increased by a 10 dB weighting factor, to account for the public's sensitivity to nighttime sound levels when most people are sleeping. The daytime (7:00 AM to 10:00 PM) energy average sound level is added to a weighted (+10 dB) mean nighttime level. The Ldn meets the EPA requirements for a description of cumulative sound level exposure, in particular the requirement that it be easily measured with simple, relatively inexpensive equipment.
- The EPA has established sound levels that are identified as protective of public health and welfare. EPA identified Ldn of 55 dB for residential areas as an outdoor sound level above which the public health and welfare will be affected (EPA 1974).

- Typical day-night sound levels in urban areas range from 68 to 90 dB; suburban areas average 50 dB; and rural range from 40 dB to 50 dB depending on the type of rural area.

For purposes of general comparison, **Table I-1** lists the average sound level of various sources as defined by EPA.

Table I-1 Examples of Sound Levels in dB at Various Locations

Location	Sound Level (dB)
Inside an Average Residence	45
Light Traffic at 100 feet	50
Inside a Private Business	52
Inside a Large Store	60
Traffic near a Freeway	65
Normal Conversation (@ 3 feet)	65
Freight Train at 100 feet	75

Source: EPA 1974

EXISTING SOUND LEVELS

The ambient noise in the vicinity of the Project Site is 40 dB to 50 dB, typical of rural areas where agricultural activities are the most common use. These are daytime averages and can be higher or lower depending on the presence and proximity of significant rural noise sources such as farm equipment.

The most common noise source in the area is from agricultural equipment. The most significant source of local noise in the area was previously generated by the railroad located at the southern boundary of the Project Site. However, this railroad has not been in operation for over five years.

NOISE IMPACTS FROM PROPOSED PROJECT

Construction

Noise generated during the construction phase would result from the operation of construction equipment and vehicles. **Table I-2** presents typical noise levels for construction equipment at a distance of 15 meters (45 feet) (Crocker 1982). These values assume the equipment is operating at full power.

Table I-2 Typical Construction Noise Levels	
Equipment Category	**Noise Level at 45 ft (dBA)**
Dump Truck	88
Portable Rock Drill	88
Concrete Mixer Truck	85
Pneumatic tool	85
Grader	85
Front-End Loader	84
Mobile Crane	83
Excavator	82
Backhoe	81
Dozer	78
Generator	78

The typical noise 45 feet from a construction site would be 85 dBA because the construction equipment can be spread throughout a construction site and may not be operating concurrently. This value and the data presented above indicate that there will be a temporary increase in ambient noise that will be limited to the construction phase of the Project. The propagation of noise depends on many factors including atmospheric conditions, ground cover, and the presence of any natural or man-made barriers. As a general rule, noise decreases by approximately 6 dBA with every doubling of the distance from the source (Bell 1982). Therefore, noise levels at various distances from the construction site can be predicted and are shown in **Table I-3.**

Table I-3 Predicted Noise Near Construction Activities	
Distance from construction site (feet)	**Predicted Noise Level (dBA)**
45	85
90	79
180	73
360	67
720	61
1440	55

Construction noise generated by the Project would be intermittent in nature and would be temporary as the construction period is estimated to be twelve to fourteen months.

The nearest noise receptors (residences) are over two miles from the Project Site. At this distance, the construction noise from the Project will be imperceptible and at or near the background levels in the area. The actual noise level at distance will vary with wind direction and velocity.

It is expected that most construction would occur during daylight hours. Some deliveries and continuous construction activities such as foundation pours or peak construction work forces will be required during non-daylight hours. Impacts to noise are expected to be minor and short in duration.

Operations

The proposed 500kV transmission line interconnection will have similar noise levels to the existing Palo Verde to North Gila #1 500kV transmission line, as the transmission interconnection will serve as a loop-in of the existing line. Noise levels in the area associated with the proposed switchyard and future substation facilities will increase incrementally, but minimally, during operation and will not likely be perceptible to receptors.

CONCLUSIONS

The impact from the Project on the sound levels in the area would be minimal. Construction noise generated by the Project would be intermittent in nature and would be temporary. The operational noise sources at the Project generate relatively low sound levels and the nearest receptors are over two miles away. Operation of the proposed Project will not have a perceptable noise impact to residences or other potential receptors in the vicinity of the Project.

This Project is not expected to generate interference with communication signals because of its remote location and because only a very short loop-in transmission line would be built as part of this Project.

REFERENCES

Environmental Protection Agency (EPA) 1974. Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare With an Adequate Margin of Safety. Office of Noise Abatement and Control. EPA 550/9-74-004. March. Community Noise.

Exhibit J

EXHIBIT J – SPECIAL FACTORS

As stated in Arizona Administrative Code R14-3-219:

> *"Describe any special factors not previously covered herein, which Applicant believes to be relevant to an informed decision on its application."*

PUBLIC PROCESS

Agua Caliente Solar, LLC conducted a public process for the Agua Caliente Solar Project which included a switchyard at the same location as the Project. This was an extensive outreach effort designed to distribute information and solicit input from the public and interested stakeholders.

A series of briefings and meetings were utilized to engage the stakeholders and the public in the process. The briefings/meetings included:

- Stakeholder Briefings
- Stakeholder Meeting
- Open House Meeting

Details of this outreach program and its results are included in Exhibit J of the CEC Application submitted by Agua Caliente Solar, LLC for the Agua Caliente Solar Project. There were no significant objections or public concerns generated regarding the location of a switchyard and other electric interconnection facilities on the Property.